

Curriculum Vitae

Dr. Binod Bihari Sahu, Ph.D.

Assistant Professor
Department of Life Science
National Institute of Technology, Rourkela
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Place of Birth: Ghuntulipasi, Chhendipada, Angul, Odisha, India

Citizenship: India

Educational Background

Ph.D. (Life Science), Institute of Life Sciences, Registration with Utkal University, Bhubaneswar Odisha, India, 2010

MSc (Botany, Biochemistry as specialization), Utkal University, Odisha, India, 2003

BSc (Botany Honours), Govt. College Angul, Utkal University, Odisha, India, 2001

Research experience

Postdoctoral Research Associate, Iowa State University, Ames, Iowa, USA, 2009-2014

Awards and fellowships

Awarded CSIR-UGC, Senior Research Fellowship, 2006-2009

Awarded CSIR-UGC, Junior Research Fellowship, 2004-2006



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Dr. Binod Bihari Sahu, Department of Life Science, NIT Rourkela, Rourkela, Odisha, INDIA 769008

Research Interest:

Plant Immunity, Nonhost resistance during plant-pathogen interaction and mechanism of PCD

Plants face lots of disease leading to loss of crop to farmers. During the plant-pathogen interaction, establishment of compatible interaction, the attempt to control the plant cell by the pathogen depends on the molecular interplay between host plant and pathogen. A single, evolutionarily conserved class of proteins called “Disease Resistance Proteins” mediates resistance to all diverse pathogens which mostly encode NB-LRR proteins. Response of plants to infection by pathogens is understood under the “zig-zag” pathway, the two-branched innate immune system. Layers of nonhost resistance in plant cells provided at first layer of defense by certain genes viz *PEN1*, *PEN2*, *PEN3* and second layer of defense by genes viz *EDS1*, *PAD4*, *SAG101*. Responses to the pathogen in the form of Hypersensitive Response (HR) are activated through PTI and ETI play major role in providing resistance to certain pathogens. Programmed plant cell death (PCD) directly limits the growth of pathogen and its development similar to apoptosis in animals. Whether, cell death is a cause or consequence of disease resistance? Plant cell death might be a back-up defense that ensures quantitative resistance to the fungus by the creation of a highly antimicrobial environment. However, effector targets in the plant cells negatively regulate host defense or function to facilitate infection. The HR might be acting as PCD and might be genetically programmed where active participation of the host is needed.

We study the mechanism of nonhost resistance in *Arabidopsis thaliana*, the model plant (which acts as a nonhost to infection) against rice fungal pathogens. The main objective of the lab is to map and clone the nonhost resistance gene(s) against fungal pathogens of rice. The identified genes (NHR) already from studies against crop pathogens by various groups have unwanted pleiotropic effects with possible alteration in defense pathways. In addition, the NHR mechanisms and pathways of plant immunity underlying the activation of plant cell death during nonhost resistance during plant-pathogen interaction would be studied. Understanding the multifaceted molecular mechanism of the nonhost resistance in the form of HR that impede the entry of pathogen in rice would be achieved by the help of advanced plant molecular genetics and genomics, plant physiology, and biochemical, plant biotechnological and microbial aspects of the disease.

Teaching

Duration	Organization	Areas
July, 2014-till	National Institute of Technology, Rourkela	Molecular genetics (LS503), Recombinant DNA Science (LS5203), rDNA Biology (LS612), Biology (LS1001), Plant Biotechnology (LS3180), Plant Science Lab (LS274), Computational Biology Lab (LS275)

Sponsored Projects:

1. **SERB**, Department of Science and Technology Research project entitled “Enhancing broad spectrum disease resistance against rice blast by engineering orthologous nonhost resistance genes of *Arabidopsis* in rice”, March, 2021-March, 2024 (3 years) PI, **ongoing Sanctioned Amount 38,76,400**
2. **CSIR** project entitled “Role of microorganisms on the productivity of the Bhitarkanika mangrove forest and potentiality of rhizosphere inhabiting bacteria in mangrove reforestation”, May, 2021-May, 2024 (3 years), Co-PI, **ongoing Sanctioned Amount 31,64,000**
3. **SERB**, Department of Science and Technology Research project entitled “Non-host resistance and programmed cell death in *Arabidopsis* for engineering broad spectrum and durable disease resistance in rice; November, 2015 – November, 2018 (3 years) PI, **completed, Sanctioned Amount 26,20,000**
4. **Govt. of Odisha**, Science and Technology Department Research project entitled “Engineering *Arabidopsis*-specific nonhost resistance mechanism in rice for durable and broad-spectrum sheath blight resistance against *Rhizoctonia solani*”; April, 2016 - March, 2020 (4 years) PI **completed, Sanctioned Amount 9,96,000**
5. **DBT** Research project entitled “Autophagy induced by cellular Stress Switches to apoptosis”; May-2015 to May-2018 (3 years) Co-PI **completed, Sanctioned Amount 21,22,000**
6. **SERB**, Department of Science and Technology Research project entitled Stonin-2 regulated Beclin-1 dependent autophagy and autophagic lysosome reformation March, 2017 to March, 2020 (3 years) Co-PI **completed Sanctioned Amount 4572200**

PhD Students:

Awarded

1. Dr. Eram Sultan; Awarded, October 2019: Topic: - Identification of characterization of a nonhost resistance gene in *Arabidopsis* against rice blast pathogen *Magnaporthe oryzae*
2. Daraksha Parween (Govt. of Odisha S & T Project SRF), joined in April, 2016, submitted.

Continuing.....

3. Kalpana Dalei (SERB, DST Project, converted to Institute SRF), joined in Jan, 2016
4. Debasish Pati (Institute JRF), joined, in July 2018
5. Vivekananda Mahanta (Institute JRF), joined, in July 2019
6. Reecha Mohapatra (CSIR-JRF), Joined, in September 2020
7. Rishi Kesh (SERB project JRF), Joined in May 2021
8. Arya Kumar Dibyananda Naik (CSIR-JRF), Joined, in August 2021

PG Dissertation (Completed)

1. Alaka Sahoo; 2021-22 Spring
2. Gajanan Sonavane; 2021-22 Spring
3. Amlan Arman; 2020-21 Spring
4. Manjunatha T; 2020-21 Spring
5. Lumbini Bhojraj Kamble; 2020-21 Spring
6. Rajeswari Das; 2019-20 Spring
7. Sunanda Dung Dung; 2019-20 Spring
8. Mohammed Shahanawaz 2019-20 Spring
9. Sohini Chakraborty; 2018-19 Spring
10. Moumita Chanda; 2017-18 Spring; Now doing PhD at IIT Kanpur
11. Dileep Singh; 2017-18 Spring
12. Nikita Yadav; 2016-17 Spring
13. Khrang Khrang Khunggur Mushahary; 2015-16 Spring; Now pursuing PhD at IIT Roorkee
14. Gyanaseni Dhar; 2014-15 Spring; Completed PhD from NIT Rourkela
15. Astha; 2014-15 Spring
16. Abhipsa Bhoi; 2014-15 Spring

Patents

1. **US Patent granted:** US 10045499 B2 date of patent Aug 14, 2018 - Bhattacharyya, Madan, Sumit Rishi and **Sahu Binod B.**- Arabidopsis Nonhost Resistance Gene(s) and use thereof to Engineer Disease Resistant Plants

Referred Publications: Total 33

1. L Behera, D Pati, **BB Sahu**, S Mohapatra (2022) One-step synthesis of Mn-carbon dot nanoprobe for signal-on detection of arsenic and reversible temperature sensing. *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 653, 130002. **IF: 5.51**
2. Kariali, Ekamber, Sahoo, Saswati Subasini, Panigrahi, Sonam, Pati, Debasish, **Sahu, Binod Bihari**, Dash, Sushanta Kumar; Mohapatra, Pravat Kumar (2022) Inter-auricular distance: A morphological biomarker for ethylene production in the boot and coincidental grain loss of rice plant. **Crop and Environment** 1; 1; 41-49
<https://doi.org/10.1016/j.crope.2022.03.001>
3. Tiwari, Menka, Debasish Pati, Reecha Mohapatra, **Binod Bihari Sahu**, and Prashant Singh. "The impact of microbes in plant immunity and priming induced inheritance: A sustainable approach for crop protection." **Plant Stress** (2022): 100072.
<https://doi.org/10.1016/j.stress.2022.100072>
4. Daraksha Parween, **Binod Bihari Sahu*** (2022) An Arabidopsis nonhost resistance gene, *IMPORTIN ALPHA 2* provides immunity against rice sheath blight pathogen, *Rhizoctonia solani*. **Current Research in Microbial Sciences**. *In press*, companion J COMICR **IF:8.13**
<https://doi.org/10.1016/j.crmicr.2022.100109>
5. Sahoo, Krishna Kalyani, **Binod B. Sahu**, V. R. Singh, and Nivedita Patra*. (2022) "Enhanced production of Bacopa saponins by repeated batch strategy in bioreactor." **Bioprocess and Biosystems Engineering** 1-13. **IF: 3.21**

6. Amber Gupta*, Birendra P. Shaw* and **Binod Bihari Sahu** (2021) Post-transcriptional regulation of the membrane transporters contributing to salt tolerance in plants. **Functional Plant Biology**; FP21153; Accepted 07 August 2021. 48(12), 1199–1212 doi:10.1071/FP-21153. **IF: 3.10**
7. Sekhar Kambakam#, Micheline N Ngaki#, **Binod Bihari Sahu**#, Kandel DR, Singh P, Sumit R, Swaminathan S, Rajesh MK, Bhattacharyya MK.* (2021) Arabidopsis Nonhost Resistance *PSS30* Gene Enhances Broad-spectrum Disease Resistance in the Soybean Cultivar Williams 82. **The Plant Journal** Sep;107(5):1432-1446. doi: 10.1111/tpj.15392. PMID: 34171147. **# Co-First author, IF: 7.09**
8. Bhol CS, Patil S, **Sahu BB**, Patra SK, Bhutia SK*. (2021) The clinical significance and correlative signaling pathways of paired box gene 9 in development and carcinogenesis. **Biochim Biophys Acta Rev Cancer**. May 7;1876(1):188561. doi: 10.1016/j.bbcan.2021.188561. Epub ahead of print. PMID: 33965511. **IF: 10.54**
9. Sonam Panigrahi#, Madhusmita Panigrahy#, Ekamber Kariali#, Sushanta Kumar Dash#, **Binod Bihari Sahu**# Sushil Kumar Sahu, Pravat Kumar Mohapatra, and Kishore Chandra Sekhar Panigrahi*. (2021) MicroRNAs modulate ethylene induced retrograde signal for rice endosperm starch biosynthesis by default expression of transcriptome. **Scientific Reports**. 11(1): 5573. doi: 10.1038/s41598-021-84663-2. PMID: 33692374; PMCID: PMC7946924. **#First author, IF: 4.37**
10. Palliyath, Gangaraj Karyath; Subrahmanya, Muralikrishna Kilingar; Antony, Ginny; **Bihari, Sahu Binod**; Hegde, Vinayaka; Krishna, Rajesh Muliya* (2021) A rapid in vitro leaf inoculation assay to investigate *Phytophthora palmivora*-coconut interactions. **Journal of Phytopathology** 169 (5) 316-328. **IF: 1.82**
11. Daraksha Parween, Eram Sultan, Kalpana Dalei, **Binod Bihari Sahu*** (2021) Arabidopsis nonhost resistance gene *PENETRATION 2* is involved in disruption of cushion formation by *Rhizoctonia solani* during early infection process. **Australasian Plant Pathol**. 50 281-292 <https://doi.org/10.1007/s13313-020-00768-8>. **IF: 1.49**
12. Bishwanath Seth, Krishna Kalyani Sahoo, K. R. Aravind, **Binod Bihari Sahu**, V. R. Singh, and Nivedita Patra* (2020). Statistical optimization of bacoside: A biosynthesis in plant cell suspension cultures using response surface methodology. **3 BIOTECH** 10 (6) 264-264. doi: 10.1007/s13205-020-02258-6. Epub 2020 May 23. PMID: 32509497; PMCID: PMC7245600. **IF: 2.89**
13. Biswajita Pradhan, Srimanta Patra, Rabindra Nayak, Chhandashree Behera, Soumya Ranjan Dash, Sneha Nayak, **Binod Bihari Sahu**, Sujit K. Bhutia*, and Mrutyunjay Jena* (2020). Multifunctional role of fucoidan, sulfated polysaccharides in human health and disease: A journey under the sea in pursuit of potent therapeutic agents. **International journal of biological macromolecules**: Dec 1; 164: 4263-4278. doi: 10.1016/j.ijbiomac.2020.09.019. Epub 2020 Sep 9. PMID: 32916197. **IF: 6.9**
14. Daraksha Parween, Eram Sultan, Kalpana Dalei, **Binod Bihari Sahu*** (2019) Arabidopsis *PEN2*, a promising gene in upraising penetration resistance against rice necrotrophic fungus *Rhizoctonia solani*. **PeerJ Preprints** e27611v1. **IF:2.98**
15. Eram Sultan, Kalpana Dalei, Prashant Singh, **Binod Bihari Sahu*** (2019) Involvement of nonhost resistance genes in disease resistance plausible for future crop improvement. **PeerJ Preprints** e27722v1. **IF:2.98**
16. Bing Wang, Rishi Sumit, **Binod B. Sahu**, Micheline Ngaki, Yang Yang, Madan K. Bhattacharyya* (2018) Arabidopsis novel glycine-rich plasma membrane *PSS1* protein enhances disease resistance in transgenic soybean plants. **Plant Physiology** Jan; 176 (1):865-878. doi: 10.1104/pp.16.01982. Epub 2017 Nov 3 PMID: 29101280; PMCID: PMC5761755. **IF: 9.11**

17. Rajesh M. K.*, Rachana K. E., Kulkarni K., **Sahu B. B.**, Thomas R. J. and Karun A. (2018) Comparative transcriptome profiling of healthy and diseased Chowghat Green Dwarf coconut palms from root (wilt) disease hot spots. **European Journal of Plant Pathology** Volume 151, Issue 1, pp 173–193 doi: 10.1007/s10658-017-1365-8. **IF: 2.22**
18. J Leonard, S Bishwanath, **Sahu Binod B.**, S V.R., P Nivedita) (2017) Statistical optimization for enhanced bacoside A production in plant cell cultures of *Bacopa monnieri* **Plant Cell, Tissue and Organ Culture** Volume 133, Issue 2, pp 203–214. **IF: 2.71**
19. **Binod B. Sahu**, Subodh K. Srivastava, Prashant Singh, Jordan L. Baumbach, Xiaoping Yi, and Madan K. Bhattacharyya* (2017) Investigation of the *Fusarium virguliforme* Transcriptomes Induced during Infection of Soybean Roots Suggests that Enzymes with Hydrolytic Activities Could Play a Major Role in Root Necrosis. **PLoS ONE**. January 17, <http://dx.doi.org/10.1371/journal.pone.0169963> PMID: 28095498; PMCID: PMC5241000. **IF: 3.24**
20. Sultan, E., Sabat, D., **Sahu, B. B.** and Mishra, M.* (2016) Structural Variations in Wing Patterning of Seasonal Polyphenic *Melanitis leda* (Satyrinae). **Microscopy Research**, 4, 47-54. doi: 10.4236/mr.2016.44006.
21. Micheline N. Ngaki, Bing Wang, **Binod B. Sahu**, Subodh K. Srivastava, Mohammad S. Farooqi, Sekhar Kambakam, Sivakumar Swaminathan, Madan K. Bhattacharyya* (2016) Transcriptomic study of the soybean-*Fusarium virguliforme* interaction revealed a novel ankyrin-repeat containing defense gene, expression of whose during infection led to enhanced resistance to the fungal pathogen in transgenic soybean plants. **PLoS ONE** 11(10): doi: e0163106. doi:10.1371/journal.pone.0163106, PMID: 27760122; PMCID: PMC5070833. **IF: 3.75**
22. Z. Xu, H. Jiang, **B. B. Sahu**, S. Kambakam, P. Singh, X. Wang, Q. Wang, M. K. Bhattacharyya, and L. Dong* (2016) “Humidity assay for studying plant-pathogen interactions in miniature controlled discrete humidity environments with good throughput,” **Biomicrofluidics**, (in press). May; 10(3): 034108 doi:10(3):034108. **IF:3.08**
23. Xiaoqi Huang, Anindya Das, **Binod B Sahu**, Subodh K Srivastava, Leonor F Leandro, Kerry O'Donnell, Madan K Bhattacharyya* (2016) Identification of Highly Variable Supernumerary Chromosome Segments in an Asexual Pathogen. **PLoS ONE** 11(6): e0158183. doi: 10.1371/journal.pone.0158183. **IF: 3.75**
24. Min Liu, Shuxian Li, Sivakumar Swaminathan, **Binod B. Sahu**, Leonor F. Leandro, Andrea Cardinal, Madan K. Bhattacharyya, Qijian Song, David R. Walker, and Silvia R. Cianzio* (2015) Identification of a soybean rust resistance gene in PI 567104B **Theoretical and Applied Genetics**. May;129(5):863-77. doi: 10.1007/s00122-015-2651-5. **IF: 5.46**
25. DL Bagdi, BP Shaw, **BB Sahu**, GK Purohit* (2015) Real time PCR expression analysis of gene encoding p5cs enzyme and proline metabolism under NaCl salinity in rice. **Journal of Environmental Biology** 36 (4) 955-961. **IF: 0.72**
26. **Binod B. Sahu**, Devinder Sandhu, Prashant Singh, Simone MacMil, Graham Wiley, William D. Beavis, Bruce Roe, Andrew J. Severin, Steven Cannon, Madan K. Bhattacharyya* (2022) Transcriptomic analysis of the early soybean-*Phytophthora sojae* interaction using 454 pyrosequencing. For communication to **PLoS ONE**.
27. Ramesh N. Pudake, Siva K. Swaminathan, **Binod B. Sahu**, L. F. Leandro, Madan K. Bhattacharyya* (2013) Investigation of the *Fusarium virguliforme* fvto1 mutants revealed that the FvTox1 toxin is involved in foliar sudden death syndrome development in soybean. **Current Genetics** 59 (3) 107-117. **IF: 3.88**
28. Rishi Sumit, **Binod B. Sahu**, Min Xu, Devinder Sandhu, and Madan K. Bhattacharyya* (2012) Arabidopsis nonhost resistance gene *PSS1* confers immunity against an oomycete

and a fungal pathogen but not a bacterial pathogen that cause diseases in soybean. **BMC Plant Biology** 13;12 (1):87. **IF: 5.09**

29. **Binod B. Sahu**, Rishi Sumit, Subodh K. Srivastava, and Madan K. Bhattacharyya* (2012). Sequence based polymorphic (SBP) marker technology for targeted genomic regions: its application in generating a molecular map of the *Arabidopsis thaliana* genome. **BMC Genomics** 13:20. **IF: 3.34**
30. Suryakant Mallik, Madhusmita Nayak, **Binod B. Sahu**, Ashok K. Panigrahi, Birendra P. Shaw* (2011) Response of antioxidant enzymes to high Na⁺ concentration in taxonomically and morphologically diverse salt-tolerant plants. **Biologia Plantarum**, 55 (1): 191-195. **IF: 1.29**
31. **Binod B Sahu*** and Birendra P. Shaw (2009) Isolation, identification and expression analysis of salt-induced genes in *Suaeda maritima*, a natural halophyte using PCR-based suppression subtractive hybridization. **BMC Plant Biology**, 9:69. doi: 10.1186/1471-2229-9-69. **IF: 5.09**
32. Sunil Kumar, Binod Bihari Sahu, Niraj Kanti Tripathy and Birendra P. Shaw* (2009) In Silico Identification of Putative Proton Binding Sites of a Plasma Membrane H⁺-ATPase Isoform of *Arabidopsis thaliana*, AHA1, **J Proteomics Bioinform**, 2: 349-359. doi: 10.4172/jpb.1000095. **IF: 0.41**
33. **Binod B. Sahu***, Birendra P. Shaw (2009) Salt inducible isoform of plasma membrane H⁺ATPase gene in rice remains constitutively expressed in natural halophyte, *Suaeda maritima*. **Journal of Plant Physiology** 166, 1077-1089. 10.1016/j.jplph.2008.12.001. **IF: 3.65**
34. Prosenjit Mondal, Narsinga Dey, Ardhendu K. Dash, A. Chatterjee, **Binod B. Sahu**, Bandita Panda, Indu B. Maiti and Surendra C. Sabat* (2007) Structural and Functional Analysis of Rice Catalase-B Gene Promoter: Presence of Dof and CAAT Binding Site. **Plant Molecular Biology reporter** 25 (1-2), 71 – 82. <https://doi.org/10.1007/s11105-007-0011-6>. **IF: 1.8**

* Corresponding author

Books:

1. Pravat Kumar Mohapatra, **Binod Bihari Sahu** (2021) Panicle Architecture of Rice and its Relationship with Grain Filling; Springer; <https://doi.org/10.1007/978-3-030-67897-5>
2. Ramesh Namdeo Pudake, **Binod Bihari Sahu**, Maya Kumari, Anil K. Sharma (2021) Omics Science for Rhizosphere Biology; Springer Nature Singapore Pte Ltd. 2021; XIII, 279 <https://doi.org/10.1007/978-981-16-0889-6>; Edition: 1Series ISSN2523-8442; Hardcover ISBN 978-981-16-0888-9; eBook ISBN: 978-981-16-0889-6.

Book Chapters:

1. Pati D., **Sahu B.B.** (2021) Long Sequencing Tools for Rhizosphere Study. In: Pudake R.N., Sahu B.B., Kumari M., Sharma A.K. (eds) Omics Science for Rhizosphere Biology. Rhizosphere Biology. Springer, Singapore. https://doi.org/10.1007/978-981-16-0889-6_12
2. Mohapatra, Pravat K; **Sahu, Binod Bihari**; The Cellular Basis of Rice Seed Growth Panicle Architecture of Rice and its Relationship with Grain Filling87-962022Springer, Cham

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3. Mohapatra, Pravat K; **Sahu, Binod Bihari**; Physiology of Variation in Individual Grain Weight of Rice Panicle Panicle Architecture of Rice and its Relationship with Grain Filling143-1632022Springer, Cham
4. Mohapatra, Pravat K; **Sahu, Binod Bihari**; Ontogeny of Organ Development in Rice Plant Panicle Architecture of Rice and its Relationship with Grain Filling49-612022Springer, Cham
5. Mohapatra, Pravat K; **Sahu, Binod Bihari**; Importance of Rice as Human Food Panicle Architecture of Rice and its Relationship with Grain FillingJan-252022Springer, Cham
6. Mohapatra, Pravat K; **Sahu, Binod Bihari**; Hormonal Regulation of Spikelet Development Panicle Architecture of Rice and its Relationship with Grain Filling187-2822022Springer, Cham
7. Mohapatra, Pravat K; **Sahu, Binod Bihari**; Genetic Analyses of Floral Development on Rice Panicle Panicle Architecture of Rice and its Relationship with Grain Filling97-1062022Springer, Cham
8. Mohapatra, Pravat K; **Sahu, Binod Bihari**; Fertilization and Seed Development in Rice Panicle Architecture of Rice and its Relationship with Grain Filling63-862022Springer, Cham
9. Mohapatra, Pravat K; **Sahu, Binod Bihari**; Enzymes Controlling Starch Biosynthesis Panicle Architecture of Rice and its Relationship with Grain Filling165-1852022Springer, Cham
10. Mohapatra, Pravat K; **Sahu, Binod Bihari**; Effects of Environmental Stresses on Grain Filling of Rice Panicle Panicle Architecture of Rice and its Relationship with Grain Filling283-2952022Springer, Cham
11. Mohapatra, Pravat K; **Sahu, Binod Bihari**; Diversity of Panicle Architecture and Traits Influencing Grain Filling Panicle Architecture of Rice and its Relationship with Grain Filling107-1282022
12. Mohapatra, Pravat K; **Sahu, Binod Bihari**; Designer Rice in Quest of High Grain Filling Panicle Architecture of Rice and its Relationship with Grain Filling297-3212022Springer, Cham
13. Mohapatra, Pravat K; **Sahu, Binod Bihari**; Change of Panicle Architecture During Domestication Panicle Architecture of Rice and its Relationship with Grain Filling129-1412022Springer, Cham
14. Mohapatra, Pravat K; **Sahu, Binod Bihari**; Botany of Rice Plant Panicle Architecture of Rice and its Relationship with Grain Filling27-482022Springer, Cham
15. Parween, Daraksha, **Binod Bihari Sahu**, Maya Kumari, and Ramesh N. Pudake. "Plant Metabolites Involved in Plant–Pathogen Interactions." *Plant Biotic Interactions: State of the Art* (2019): 61.

16. Kalpana Dalei, **Binod Bihari Sahu**, Maya Kumari, Ravi Mani Tripathi, Ramesh N. Pudake
Chapter: Advances in Genetic Transformation of Litchi in The Lychee Biotechnology
published by Springer Mar (2017) pp 421-436
17. Eram Sultan, Kalpana Dalei, Khrang Khunggur Mushahary, and **Binod Bihari Sahu**
Chapter Plant Immunity: Insight into Disease Resistance and Current Trends from Creation
to Convention Frontiers in Life Sciences Editors: Rajendra Kumar Behera, Ekamber Kariali
and Sanjat Kumar Sahu Excel India Publishers, New Delhi, India (2016) pp. 56–74.
18. TRACE ELEMENTS in the ENVIRONMENT biogeochemistry, Biotechnology, and
Bioremediation Chapter 16 Detoxification/Defence Mechanisms in metal-exposed Plants.
Birendra P. Shaw, M.N.V. Prasad, Vikash K. Jha, **Binod B. Sahu**.
19. Ramesh N. Pudake, Maya Kumari, **Binod Bihari Sahu**, and Eram Sultan Chapter:
Targeted Gene Disruption Tools for Fungal Genomics in Modern Tools and Techniques to
Understand Microbes published by Springer April (2017) pp 81-102
20. Book Review Chapter: Environmental bioremediation Technologies, Chapter 6-Metal
resistance in plants with particular reference to aluminium. Birendra P. Shaw, Vikash K.
Jha and **Binod B. Sahu**. pp. 147-172.

Conference and workshop organized (Continuing Education)

1. **International Conference** on “Omics of Plant-Pathogen Interaction with their implication”
Organiser: **Binod Bihari Sahu**; Mode: Online, November 16-18th, 2020
2. **Workshop** on “Techniques to Understand Autophagic Processes in Mammalian Systems (TUAPMS)” Organiser: Sujit Kumar Bhutia, Rohan Dhiman, **Binod Bihari Sahu**; 26-02-2020- 01-03-2020

Nucleotide Sequences Submitted to Gene Bank (NCBI)

EU591512, EU591511, EU190459, EU190458, EF611740, EF611739, DQ925817.

ESTs (from SSH) submitted to EST database (NCBI)

FC932781 - FC932780, Total 152 and FG228208 - FG228224, Total 017

SNP dataset deposited in public NCBI database for Niederzenz (*Arabidopsis thaliana*)

SRA048909.1 and NCBI_SS # 478443777 – 428555842

BioSample: SAMN04520040; Sample name: Mont-1 RNA-Seq; SRA: SRS1313756

BioProject accession number: PRJNA926508 , mosA NGS Seq

Academic Editors of

PLOS One

Journal of Plant Stress Physiology

Reviewed Manuscripts from Following Journals:

BMC Plant biology

BMC Genomics

BMC Research Note

International Research Journal of Plant Science

Journal of Agricultural Biotechnology and Sustainable Development

African Journal of Environmental Science and Technology

Invited speaker

1. Presented seminar and training on **New Insights into plant Immunity** at ICAR-Indian Agricultural Statistics Research Institute (IASRI), New Delhi during Feb 3-23, 2015, for the training programme on “Recent advances in statistical Genetics” organised by Centre of advanced faculty training (CAFT) in agricultural statistics and computer application.
2. Invited Seminar on “Mapping and cloning a nonhost resistance gene against *Phytophthora sojae* which causes the root and stem rot disease of soybean” at Department of Life Science Jyoti Vihar Sambalpur for National Conference on “Frontiers in Life Sciences” during 12th -13th December 2015 on the occasion of 17th Alumni meet.

Selected National and International Conference Attended:

1. Presented poster “The transcriptome of the *Fusarium virguliforme* infected soybean roots” at the 14th Biennial Molecular & Cellular Biology of the Soybean, August 12-15 2012 at Des Moines, IA, USA.
2. Presented paper “*Arabidopsis* Nonhost Resistance Gene, *Pss1* Confers Immunity against Oomycete and Fungal but not Bacterial Pathogens of Soybean” in Plant & Animal Genomes XIX Conference, January 15-19, 2011 at San Diego, CA USA.
3. Participated in International Symposium on Environmental Factors, Cellular Stress and Evolution October 13-15, 2006 at Banaras Hindu University, Varanasi, India.
4. Participated in the workshop on “Molecular Biology Concepts and Techniques” at the Institute of Life Sciences, Bhubaneswar, India from December 12-16, 2006.
5. Participated in International conference on Nanomedicine-2007 at Bhubaneswar, India during February 22-23, 2007.
6. Participated in Seminar and Training on Confocal Microscopy held at Institute of Life Sciences, Bhubaneswar, by Leica Microsystems during May 22-24, 2007.
7. Presented a paper entitled “Characterization of a new H⁺-ATPase isoform in rice under salinity stress” by **Binod B. Sahu**, B. P. Shaw in International Conference on New Horizons in Biotechnology (NHBT-2007), held at Trivandrum during November 26-29, 2007.
8. Participated in 35th Annual meeting of the Indian Immunology Society 12-14th December 2008, Bhubaneswar-751 023, Odisha.