

Biodata of the Scientist

Division/Section: Division of Crop Improvement

A. Personal information

1. Name: Dr. MANAS RANJAN SAHOO

1.a. Qualification: Ph. D.

2. Designation: Head

3. Address: F144, The Cosmopolis, Aiginia, Bhubaneswar 751019, Odisha, India

4. Phone Numbers: 9437613286 / 9337105852

5. Email: manas.sahoo@icar.gov.in

6. Countries visited: China, Russia, Spain, USA

B. Professional information

1. Area of specialization: Horticulture (Vegetable Science)

2. Area of interest: Understanding biotic and abiotic stress tolerance mechanisms in horticultural crops using molecular biology and biotechnological tools

3. Number of institute projects completed:

Sl. No.	Title of the projects	Role	Start	End
1	Understanding avoidance and tolerance mechanism of taro against biotic stresses” (Project Code: IXX09880)	PI	December 2012	December 2015
2	Standardization of Production and Processing Technologies of Minor Tuber Crops in Manipur” (Project Code: IXX10691)	PI	July 2013	July 2016
3	Integrated approach for sustainable management of tree bean (<i>Parkia roxburhii</i> G. Don) decline” (Project Code: IXX14238)	PI	November 2017	November 2020
4	Characterization and Development of Robust Diagnostics for On-site Decision Making and Management of Emerging Viral Diseases” (Project Code: IXX13421)	Co-PI	December 2016	December 2020
5	Technological intervention through adoption of integrated farming system for livelihood improvement of the farmers in Manipur (Project Code: IXX08975)	Co-PI	April 2012	March 2016
6	Development of inbred lines and high-yielding F1 hybrids of chilli and brinjal suitable for Eastern coastal region market segment having combined resistance to bacterial wilt and root-knot nematodes [HORTIIHRCIL2013 (180) 18]	PI	September 2020	March 2023

4. Number of Institute projects being handled:

Sl. No.	Title of the projects	Role	Start	End
1	Development of DNA barcode standards and RNA secondary structure predictions in sweet potato	PI	13.07.2023	31.03.2025
2	Genetic improvement for drought tolerance in sweet potato and high yielding, disease tolerant nutritionally rich lines in taro	Co-PI	13.07.2023	31.03.2025
3	Breeding for earliness, quality traits and salinity tolerance in sweet potato	Co-PI	13.07.2023	31.03.2025
4	Genetic improvement of edible aroids for resistance to biotic stress and quality parameters	Co-PI	13.07.2023	31.03.2025

5. Number of externally funded projects completed:

Sl. No.	Title of the projects	Role	Start	End
1	Nutraceutical Properties of Underutilized Fruits and Vegetables in NEH Region of India under DBT Twinning Programme (59.04 lakhs ; sanction order enclosed) (Project Code: OXX03153)	PI	December 2014	June 2018
2	<i>In vitro</i> mass-multiplication and conservation of some endangered <i>Citrus</i> species of NEH Region of India under DBT Twinning Programme (122.12 lakhs ; sanction order enclosed) (Project Code: OXX03892)	PI	January 2017	June 2020
3	Gene expression profiling of taro (<i>Colocasia esculenta</i> L. Schott) and role of transcriptional activators of epicuticular wax in host resistance against <i>Phytophthora</i> leaf blight disease under DBT Twinning Programme (68.78 lakhs ; sanction order enclosed) (Project Code: OXX04389)	PI	September 2018	March 2022
4	Molecular Diagnostics, Transcriptomics and Cisgenic Approaches to Combat Citrus Greening (Huanglongbing) Disease of Citrus under DBT Twinning Programme (163.40 lakhs ; sanction order enclosed) (Project Code: OXX03902)	Co-PI	January 2017	June 2020
5	<i>Micro/in vitro</i> propagation of underutilized vegetable crops and supply for the state of Odisha under MIDH , Govt. of Odisha (66.5 lakhs ; office order enclosed)	Co-PI	March 2021	Ongoing

Other externally funded projects completed (research projects of National Priority)

Sl. No.	Title of the projects	Role	Start	End
1	'Popularization of tuber crops through training,	PI	December	December

	demonstration and entrepreneurship development in Manipur' under special funds for tuber crops (19 lakhs ; 3 years)		2012	2015
2	Mentored the DST WOS A project 'Understanding molecular mechanisms of resistance in tomato against bacterial wilt under DST WOS A Programme (23.60 lakhs ; 3 years)	Mentor	June 2014	Nov 2016
3	Mentored the DST WOS A project 'Genetic Enhancement of Taro [<i>Colocasia esculenta</i> (L.) Schott] Genotypes Indigenous to NE India for <i>Phytophthora</i> Leaf Blight Resistance' (16.50 lakhs ; 3 years)	Mentor	May 2015	May 2018
4	Mentored the DST WOS B project ' <i>In vitro</i> regeneration and <i>in situ</i> conservation of Shirui lily (<i>Lilium macklineae</i>), the rare endangered and heritage flower of Manipur' (3.25 lakhs ; 1 year)	Mentor	Jan 2015	Dec 2015
5	Mentored the DST Research Training Fellowship for Developing Countries Scientists (DST-RTF-DCS) on the project 'Compositional and structural analyses of epicuticular wax derived from edible aroids'; Mr. Facundo Pienezek, CONICET, Argentina	Mentor	February 2020	July 2020

6. Number of externally funded projects being handled:

1	Mentored the CV Raman International Fellowship for African researchers (CVRIF) on the project 'DNA barcoding and retrotransposon-based insertion polymorphism (RBIP) markers enabled identification of sweet potato varieties'; Mr. Tomiwa B.S., CRIN, Nigeria.	Mentor	Feb 2024	May 2024
2	Mentored the CV Raman International Fellowship for African researchers (CVRIF) on the project 'Phytochemical profiling and DNA barcoding of tropical tuber crop wild relatives'; Dr. Lile N.M.C., Univ. of Yaounde, Cameroon.	Mentor	Feb 2024	Aug 2024
3	Mentored the CV Raman International Fellowship for African researchers (CVRIF) on the project 'Structural and functional characterization of edible aroids pseudo stems for harnessing the potential of natural fibres'; Mr. Fowowe A.O., Univ. of Ibadan, Nigeria.	Mentor	Mar 2024	Sep 2024

7. Number of students guided for a) Ph.D.: 04; b) M.Sc.: 11

8. Number of students being guided for: Nil

8.a. information about the students under your guidance

Name of the student	Course undergoing (Ph.D/M.Phil/M.Sc)	Title of the project/Thesis	E-mail address
Dr. Bibhuti Bhusan Sahoo	Ph. D. (Horticulture)	Evaluation of germplasm and gamma ray induced mutants against <i>Phytophthora</i> leaf blight disease in taro [<i>Colocasia esculenta</i> (L.) Schott]	bibhutihort@rediffmail.com
Dr. M. Premi Devi	Ph. D. (Horticulture)	Effect of Processing on Nutraceutical Properties of Kachai Lemon (<i>Citrus jambhiri</i>) and Tree Bean (<i>Parkia roxburghii</i>)- Nutritionally Potential Crops of North East India	premiyensis@gmail.com
Dr. Y. Indrani Devi	Ph. D. (Horticulture)	Breeding for <i>Phytophthora</i> leaf blight resistance in taro [<i>Colocasia esculenta</i> (L.) Schott]	indranimaximus@gmail.com
Dr. T. Roshni Devi	Ph. D. (Genetics)	<i>In vitro</i> Regeneration in <i>Citrus jambhiri</i> Lush., an Important Citrus species of North Eastern Hill Region of India	roshnidevibt@gmail.com
Ms. K. Ophelia	M. Sc. (Biotechnology)	Influence of plant growth regulators on <i>in vitro</i> shoot proliferation and secondary metabolites accumulation in Shirui lily (<i>Lilium mackliniae</i>)	-
Ms. T. Roshni Devi	M. Sc. (Biotechnology)	<i>In vitro</i> evaluation of Chinese potato (<i>Solenostemon rotundifolius</i> Poir., Morton) genotypes under Polyethylene Glycol Mediated Osmotic Stress Condition	roshnidevibt@gmail.com
Ms. Redina Sapam	M. Sc. (Biotechnology)	Isolation and characterization of microbiomes associated with acute tree bean (<i>Parkia roxburghii</i> G. Don) decline	-
Ms. Vungkimjo	M. Sc. (Biotechnology)	Effect of Nitsch vitamins and cytokinins on <i>in vitro</i> shoot proliferation from different	-

		explants of tree bean (<i>Parkia roxburghii</i> G. Don)	
Ms. Pamyala Malue	M. Sc. (Biotechnology)	Effect of plant growth regulators on <i>in vitro</i> shoot regeneration from cormel tip cultures of taro [<i>Colocasia esculenta</i> (L.) Schott]	-
Ms. T. Sachirani Devi	M. Sc. (Biotechnology)	Biochemical and Biomolecular Characterization of taro hybrids	-
Ms. Bandana Mishra	M. Sc. (Biotechnology)	Molecular Characterization of Brinjal and Its Wild Relatives Using DNA Barcoding Markers	-
Ms. Lipsha Behera	M. Sc. (Horticulture)	Study of mechanism of bacterial wilt resistance in wild brinjal (<i>Solanum melongena</i> L.)	-
Ms. Priyadarshani Mohapatra	M. Sc. (Plant Physiology)	Studies on tolerance mechanisms of wild brinjal genotypes under NaCl induced salinity stress	-
Mr. Soumendra Pradhan	M. Sc. (Plant Physiology)	Effect of PEG mediated osmotic stress on morpho-physiological and biochemical properties of brinjal germplasm	-
Ms. Anjali Krishna AS	M. Sc. (Biotechnology)	Expression of defense-associated genes in taro (<i>Colocasia esculenta</i> L. Schott) owing to leaf blight disease caused by <i>Phytophthora colocasiae</i> Raciborski	krishnaanjali538@gmail.com

9. Information on guide ship

Guide ship for Ph.D/ M.Phil/ M.Sc	University	Subject
Ph. D. (Horticulture)	Visva Bharati	Horticulture
Ph. D. (Genetics)	Visva Bharati	Genetics
M. Sc. (Biotechnology)	Manipur University	Biotechnology
M. Sc. (Biotechnology)	TACT, Bhubaneswar	Biotechnology
M. Sc. (Horticulture)	OUAT, Bhubaneswar	Horticulture
M. Sc. (Plant Physiology)	OUAT, Bhubaneswar	Plant Physiology
M. Sc. (Biotechnology)	Amritha School of Biotechnology	Biotechnology

10. Number of Research papers (Add list):

List of Publication (Best Forty)

1. Bhupenchandra I, Chongtham SK, Devi AG, Dutta P, Lamalakshmi E, Mohanty S, Choudhary AK, Das A, Sarika K, Kumar S, Yumnam S, Sagolsem D, Anand YR, Bhutia DD, Victoria M, Vinodh S, Tania C, Sharma AD, Deb L, **Sahoo MR***, Seth CS, Swapnil P, Meena M*. 2024. Harnessing weedy rice as functional food and source of novel traits for crop improvement. *Plant, Cell & Environ*, 2024; 1-24. <https://doi.org/10.1111/pce.14868> (NAAS IF: 13.36)
2. Bhupenchandra I, Basumatari A, Dutta S, Das A, Choudhary AK, Lal R, Sharma DA, Sen A, Prabhavati Y, **Sahoo MR***. 2023. Repercussions of fertilization with boron and enriched organic manure on soil chemical characteristics, boron and phosphorus fractions, and French bean productivity in an acidic Inceptisol of eastern Himalaya. *Scientia Hort*. 324: 112589. <https://doi.org/10.1016/j.scienta.2023.112589> (NAAS IF: 10.30)
3. Mohanty S, Mishra BK, Dasgupta M, Acharya GC, Singh S, Naresh P, Bhue S, Dixit A, Sarkar A, **Sahoo MR***. 2023. Deciphering phenotyping, DNA barcoding, and RNA secondary structure predictions in eggplant wild relatives provide insights for their future breeding strategies. *Sci Rep*. 13, 13829. <https://doi.org/10.1038/s41598-023-40797-z> (NAAS IF: 10.60)
4. Wahengbam ED, Devi CP, Sharma SK, Roy SS, Maibam A, Dasgupta M, Luikham S, Chongtham T, Ningombam A, Bhupenchandra I, Singh LK, Devi YP, Thokchom S, Khaba CI, Singh NB, Rajashekar Y, Das S, Mohanty S and **Sahoo MR***. (2023) Reactive oxygen species turnover, phenolics metabolism, and some key gene expressions modulate postharvest physiological deterioration in cassava tubers. *Front. Microbiol*. 14:1148464. <https://doi.org/10.3389/fmicb.2023.1148464> (NAAS IF: 11.20)
5. Bhoi TK, Samal I, Mahanta DK, Komal J, Jinger D, **Sahoo MR**, Acharya GC, Nayak P, Sunani SK, Saini V, Raghuraman M, Singh S. 2023. Understanding How Silicon Fertilization Impacts Chemical Ecology and Multitrophic Interactions Among Plants, Insects and Beneficial Arthropods. *Silicon* 15, 2529–2549. <https://doi.org/10.1007/s12633-022-02220-6> (NAAS IF: 9.40)
6. Singh S, Raghuraman, M, Keerthi MC, Das A, Kar SK, Das B, Devi HL, Sunani SK, **Sahoo MR**, Casini R. et al. 2023. Occurrence, Distribution, Damage Potential, and Farmers' Perception on Fall Armyworm, *Spodoptera frugiperda* (J.E. Smith): Evidence from the Eastern Himalayan Region. *Sustainability* 15, 5681. <https://doi.org/10.3390/su15075681> (NAAS IF: 9.90)
7. Amom T, Tikenndra L, Potshangbam AM, Bidyananda N, Devi RS, Dey A, **Sahoo MR**, Vendrame WA, Jamir I, Nongdam P. 2023. Conservation strategies for endemic *Dendrocalamus manipureanus*: A study on genetic diversity and population structure based on molecular and phytochemical markers. *South Afr. J. Bot*. 152: 106-123. <https://doi.org/10.1016/j.sajb.2022.11.045> (NAAS IF: 9.10)
8. Paramanik K, Sahu GS, Acharya GC, Tripathy P, Das M, **Sahoo MR**, Koundinya AVV, Mohapatra PP, Veera UR. 2023. DUS Characterization and Evaluation of Untapped French Bean (*Phaseolus vulgaris* L.) Genotypes. *Int. J. Environ. Climate Change*, 13(1): 225-243. (NAAS IF: 5.16)

9. Bhupenchandra I, Basumatary A, Choudhary AK, Kumar A, Sarkar D, Chongtham SK, Singh AH, Devi EL, Bora SS, Devi SM, **Sahoo MR**, Gudade BA, Kumar A, Devi SH, Gogoi B, Harish MN, Gupta G, Olivia LC, Devi YP, Sarika K, Thapa S, and Rajawat MVS. Elucidating the impact of boron fertilization on soil physico-chemical and biological entities under cauliflower-cowpea-okra cropping system in an Eastern Himalayan acidic Inceptisol, 2022. *Frontiers in Microbiology*, 13: 996220. <https://doi.org/10.3389/fmicb.2022.996220> (NAAS IF: **11.64**)
10. Devi MP, Dasgupta m, Mohanty S, Sharma SK, Hedge V, Roy SS, Renny PR, Kumar KB, Patel HK and **Sahoo MR***. 2022. DNA Barcoding and ITS2 Secondary Structure Predictions in Taro (*Colocasia esculenta* L. Schott) from the North Eastern Hill Region of India. *Genes*, 13(12): 2294, <https://doi.org/10.3390/genes13122294> (NAAS IF: **10.10**)
11. Bhupenchandra I, Chongtham SK, Devi EL, Ramesh R, Choudhary AK, Salam MD, **Sahoo MR**, Bhutia TL, Soibam HD, Thounaojam AS, Behera C, Harish MN, Kumar A, Dasgupta M, Devi YP, Singh D, Bhagowati S, Devi CP, Singh HR, and Khaba CI. 2022. Role of biostimulants in mitigating the effects of climate change on crop performance. *Frontiers in Plant Science*, 13:967665. <https://doi.org/10.3389/fpls.2022.967665> (NAAS IF: **11.75**)
12. Acharya GC, Mohanty S, Dasgupta M, Sahu S, Singh S, Ayyagari KVV, Kumari M, Naresh P, **Sahoo MR***. 2022. Molecular phylogeny, DNA barcoding, and ITS2 secondary structure predictions in the medicinally important *Eryngium* genotypes of east coast region of India. *Genes*, 13(9):1678, <https://doi.org/10.3390/genes13091678> (NAAS IF: **10.10**)
13. Pieniazek F, Dasgupta M, Messina V and Devi MP, Devi YI, Mohanty S, Singh S, Sahoo BB, Nongdam P, Acharya GC, **Sahoo MR***. 2022. Differential occurrence of cuticular wax and its role in leaf physiological mechanisms of three edible aroids of northeast India. *Agriculture* 12:724. <https://doi.org/10.3390/agriculture12050724> (NAAS IF: **9.6**)
14. **Sahoo MR**, Kuna A, Devi MP, Mandarapu S and Dasgupta M. 2022. Fortification of ready-to-eat extruded snacks with tree bean powder: nutritional, antioxidant, essential amino acids, and sensory properties. *J Food Science and Technology*, 59(6):2351-2360. <https://doi.org/10.1007/s13197-021-05251-w> (NAAS IF: **9.10**)
15. Singh S, **Sahoo MR**, Acharya GC, Jinger D and Nayak P. 2022. Silicon: a potent nutrient in plant defense mechanisms against arthropods. *Silicon*, 14, 6493–6505. <https://doi.org/10.1007/s12633-021-01427-3> (NAAS IF: **9.4**)
16. Acharya GC, Naresh P, Kumari M, Roy TK, Shivashankara KS, **Sahoo MR***. 2022. Phytochemical profiling of spiny coriander (*Eryngium foetidum* L.) – A potential perennial spicing-culinary herb of eastern India. *Acta Chromatographica*, 34 (2): 197–202 <https://doi.org/10.1556/1326.2021.00909> (NAAS IF: **7.9**)
17. Singh S, Samant D, **Sahoo MR**, Kishore K, Jinger D, Acharya GC. 2022. Invasion and escalation of *Aleurodius rugioperculatus*: An alarming pest in east coast region of India. *Indian J. Agril. Sc.* 92(8): 1029-1032. (NAAS IF: **6.4**)
18. Tikendra L, Dey A, Jamir I, **Sahoo MR** and Nongdam P. 2022. Cytokinin influence on *in vitro* shoot induction and genetic stability assessment of *Dendrocalamus latiflorus* Munro: a commercially important bamboo in Manipur, North-East India. *Vegetos*, <https://doi.org/10.1007/s42535-022-00392-5> (NAAS IF: **5.68**)

19. Devi TR, Kole PC and **Sahoo MR***. 2022. Influence of basal vitamins, growth regulators, and explants on *in vitro* organogenesis from synthetic seeds of *Citrus jambhiri* Lush. *Journal of Applied Horticulture*, 24(2): 140-144. <https://doi.org/10.37855/jah.2022.v24i02.27> (NAAS IF: **5.43**)
20. Devi TR, Dasgupta M, **Sahoo MR***, Kole PC and Prakash N. 2021. High efficient *de novo* root-to-shoot organogenesis in *Citrus jambhiri* Lush.: Gene expression, genetic stability and virus indexing. *PLoS ONE* 16(2): e0246971. <https://doi.org/10.1371/journal.pone.0246971> (NAAS IF: **9.7**)
21. Tikendra L, Potshangbam AM, Dey A, Devi TR, **Sahoo MR**, Nongdam P. 2021. RAPD, ISSR, and SCoT markers based genetic stability assessment of micropropagated *Dendrobium fimbriatum* Lindl. var. *oculatum* Hk. f.- an important endangered orchid. *Physiology and Molecular Biology of Plants*, 27(2):341–357, <https://doi.org/10.1007/s12298-021-00939-x> (NAAS IF: **9.5**)
22. Singh S, Das B, Das A, Majumdar S, Devi HL, Godara RS, Sahoo AK and **Sahoo MR**. 2021. Indigenous plant protection practices of Tripura, India. *Journal of Ethnobiology and Ethnomedicine*. 17:50. <https://doi.org/10.1186/s13002-021-00476-7> (NAAS IF: **9.6**)
23. **Sahoo MR***, Devi TR, Dasgupta M, Nongdam P and Prakash N. 2020. Reactive oxygen species scavenging mechanisms associated with polyethylene glycol mediated osmotic stress tolerance in Chinese potato. *Scientific Reports*, 10:5404. <https://doi.org/10.1038/s41598-020-62317-z> (NAAS IF: **10.6**)
24. Devi YI, **Sahoo MR***, Mandal J, Dasgupta M, and Prakash N. 2020. Correlations between antioxidative enzyme activities and resistance to *Phytophthora* leaf blight in taro. *Journal of Crop Improvement*, <https://doi.org/10.1080/15427528.2020.1809586> (IF: **1.3**, NAAS IF: **7.3**)
25. Kuna A, **Sahoo MR**, Mandarapu S, Devi MP, Dasgupta M, and Mulinti S. 2020. Nutrient, antioxidant and anti-nutrient composition of value added products made with underutilized forest produce bay leaf (*Cinnamomum tamala*). *Agric Eng Int.*, 22(2): 226-234. (IF: **0.64**; NAAS IF: **6.64**)
26. Wickramasinghe PCK, Murray AF, **Sahoo MR**, Dien M, Luckett CR, Dia VP, Munafu JP. 2019. The effect of processing on *Garcinia xanthochymus* fruit beverage. *J. Food Measurement and Characterization*, 14: 55-68. <https://doi.org/10.1007/s11694-019-00267-5> (NAAS IF: **9.4**)
27. **Sahoo MR***, Devi MP, Dasgupta M, Prakash N and Ngachan SV. 2018. An efficient protocol for *in vitro* regeneration and conservation of Shirui lily (*Lilium mackliniae* Sealy): a lab-to-land approach to save the rare endangered Asiatic lily species. *In vitro Cellular & Developmental Biology – Plant*, **54(6): 701-710**. <http://doi.org/10.1007/s11627-018-9916-z> (NAAS IF: **8.6**)
28. **Sahoo MR***, Dasgupta M, Kole PC and Mukherjee A. 2018. Photosynthetic, physiological and biochemical events associated with polyethylene glycol-mediated osmotic stress tolerance in taro (*Colocasia esculenta* L. Schott). *Photosynthetica*, 56 (4): 1069-1080. <https://doi.org/10.1007/s11099-018-0819-3> (NAAS IF: **8.7**)
29. Devi MP, **Sahoo MR***, Kuna A, Sowmya M, Dasgupta M, Deb P and Prakash N. 2018. Hydrogen peroxide pre-treatment enhances antioxidant properties and free radical scavenging activities of tree bean (*Parkia roxburghii* G. Don) seeds and pods during

- storage. *Nutrition and Food Science*, <https://doi.org/10.1108/NFS-07-2018-0195> (IF: **0.31**; NAAS IF: **6.31**)
30. Sahoo BB, Kole PC, **Sahoo MR**. 2015. Screening and selection of *Colocasia* for leaf blight, drought and salinity. *Int J. Bioresources Stress Manage.* 6 (1): 7-14. (NAAS IF: 5.4)
 31. Surchandra T, Roy SS, Singh NR, **Sahoo MR**, and Prakash N. 2012. Partial purification and biochemical characterization of acid phosphatase from germinated mung bean (*Vigna radiata*) seeds. *African Journal of Biotechnology*. (NAAS IF: **6.6**)
 32. **Sahoo MR***, Dasgupta M, Kole PC and Mukherjee A. 2010. Biochemical changes in leaf tissues of taro [*Colocasia esculenta* L. (Schott)] infected with *Phytophthora colocasiae*. *Journal of Phytopathology*, 158:154-159. <https://doi.org/10.1111/j.1439-0434.2009.01599.x> (NAAS IF: **7.5**)
 33. **Sahoo MR***, Kole PC, Dasgupta M and Mukherjee A. 2009. Changes in phenolics, polyphenol oxidase and its isoenzyme patterns in relation to resistance in taro against *Phytophthora colocasiae*. *Journal of Phytopathology*, 157:145-153. <https://doi.org/10.1111/j.1439-0434.2008.01458.x> (NAAS IF: **7.5**)
 34. Dasgupta M, **Sahoo MR**, Kole PC and Mukherjee A. 2008. Evaluation of orange-fleshed sweet potato (*Ipomoea batatas* L.) genotypes for salt tolerance through shoot apex culture under *in vitro* NaCl mediated salinity stress conditions. *Plant Cell, Tissue and Organ Culture*, 94:161-170. <https://doi.org/10.1007/s11240-008-9400-2> (NAAS IF: **9.0**)
 35. **Sahoo MR**, Dasgupta M, Kole PC, Bhatt J and Mukherjee A 2007. Antioxidative enzymes and isozymes analysis of taro genotypes and their implications in *Phytophthora* blight disease resistance. *Mycopathologia* 163 (4): 241-248. <https://doi.org/10.1007/s11046-007-9000-4> (NAAS IF: **11.5**)
 36. **Sahoo MR***, Dasgupta M, Mukherjee A, Sahoo AK and Kole PC. 2005. *In vitro* screening and characterization of taro for *Phytophthora* leaf blight disease. *Journal of Mycopathological Research*, 43(1): 87-90. (NAAS IF: 5.11)
 37. **Sahoo MR***, Dasgupta M and Mukherjee A 2006. Effect of *in vitro* and *in vivo* induction of polyethylene glycol mediated osmotic stress on hybrid taro (*Colocasia esculenta* (L.) Schott). *Annals of Tropical Research* 28 (2): 1-12. (NAAS IF: Nil)
 38. Devi MP, **Sahoo MR**, Dasgupta M, Prakash N and Ngachan SV. 2015. Standardization of *in vitro* regeneration protocol for conservation of Shirui Lily (*Lilium mackliniae*) - An endangered heritage flower under changing climatic conditions. *Proc. Environ Sc.* 29: 288. <https://doi.org/10.1016/j.proenv.2015.07.217> (NAAS IF: Nil)
 39. Kuna A, Sahoo MR, Sowmya M, Devi MP, Sreedhar M, Tholemfhuang. 2018. Nutrient and antioxidant properties of value added king chilli (*Capsicum chinense*) products. *Int. J. Curr. Microbiol. App. Sci.* 7(6), 1-5.
 40. **Sahoo MR***, Mukherjee A, Dasgupta M, Sahu AK and Kole PC, 2007. Correlation studies in taro (*Colocasia esculenta* (L.) Schott) for leaf blight disease tolerance. *Journal of Root Crops*, 33 (1): 12-15. (NAAS IF: **4.3**)

11. Number of Books/Book chapters (Add list):

Authored

1. A. Kuna, **M. R. Sahoo**, M. Sreedhar, Ch. Tania, M. Dasgupta, M. Sowmya and M. P. Devi. 2017. Value addition to underutilized crops from NEH Region of India. 01/MFPI-QCL-DBT/ENG/2017/100. **102** p.
2. Sharma PK, Ansari MA, Roy SS, Punitha P, Baishya LK, **Sahoo MR**, Kumar D, Singh IM, Prakash N and Ngachan SV. 2013. Diseases of Citrus and Their Management. Technology Bulletin No. RCM (TB)-08, **20** Pages, ICAR Research Complex for NEH Region, Manipur Centre, Lamphelpat, Imphal, Manipur.
3. Roy SS, Prakash N, **Sahoo MR**, Devi A. Rajlakshmi and Juliana Soibam. 2013. Papaya. Technology Bulletin No. RCM (TB)-06, **44** Pages, ICAR Research Complex for NEH Region, Manipur Centre, Lamphelpat, Imphal Manipur.
4. Roy SS, Nath A, **Sahoo MR**, Sharma PK, Singh IM and Prakash N. 2012. Kiwifruit-The Hairy Berry. Technology Bulletin No. RCM (TB)-04, **45** Pages, ICAR Research Complex for NEH Region, Manipur Centre, Imphal, Manipur.
5. Roy SS, **Sahoo MR**, Sharma PK and Prakash N. 2012. Pineapple. Technology Bulletin No. RCM (TB)-05, **36** Pages, ICAR Research Complex for NEH Region, Manipur Centre, Lamphelpat, Imphal, Manipur.
6. Roy SS, Sharma PK, Patel RK, **Sahoo MR**, Kumar D, Punitha P and Prakash N. 2012. Production Manual of Passion Fruit for North Eastern Hill Region. Technology Bulletin No. RCM (TB)-03, **44** Pages, ICAR Research Complex for NEH Region, Manipur Centre, Lamphelpat, Imphal, Manipur.
7. **Sahoo M R**, Roy S S, Sharma S K, Dasgupta M, Devi M P, Prakash N. 2015. Wet lab training manual on Advances in Plant Tissue Culture and Mechanisms of Stress Tolerance in Higher Plants. Training Manual No. RCM(TM)-06, **95** pages. ICAR Research Complex for NEH Region, Manipur Centre, Lamphelpat, Imphal-795004.
8. L. K. Baishya, Kr. R. Singh, **M. R. Sahoo**, N. Prakash and D. J. Rajkhowa. 2015. Climate Change: Approaches and Strategies for Mitigation and Sustainable Agriculture”, Training manual no. RCM TM-07, p **132**. ICAR Research Complex for NEH Region, Manipur Centre, Lamphelpat, Imphal, Manipur, India.
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2. Tikendra L, Dey A, **Sahoo MR**, Nongdam P. Genetic stability in micropropagated orchids: Assessment by molecular marker and flow cytometry. In: (eds) Genome size and genetic homogeneity of regenerated plants: Methods and Applications. <https://doi.org/10.2174/9789815165555123010011> (Bentham Science Book Chapter)
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12. Number of Technical Bulletins:

1. Value addition to **King Chilli** (*Capsicum chinense*).
 2. **Kachai Lemon** (*Citrus jambhiri*): Underutilization to value addition.
 3. **Tree Bean** (*Parkia roxburghii*): Underutilization to value addition.
 4. Value addition to **Prunus** (*Prunus nepalensis*); Tasty fruits to healthy products.
 5. **Bay Leaf** (*Cinnamomum tamala*): Underutilization to value addition.
 6. Introducing **Kokum** (*Garcinia indica*) for value addition.
13. Consultancies offered (Add list and give a brief description): Nil
14. Technologies developed (Add list and give a brief description):

Technologies

Sl. No.	Technologies	Year of development	Project / Activity Name
1	Release of Tomato, RC Manikhamenashinba-1 at SVRC	2014	SVRC
2	Release of Tomato, RC Manikhamenashinba-2 at SVRC	2014	SVRC
3	Release of Brinjal, RCMB-10 at SVRC	2014	SVRC
4	Release of Jatropha, RC Mani Jatropha-1 at SVRC	2014	SVRC
5	<i>In vitro</i> protocol for mass production of Shirui lily	2017-18	DST WOS B Project (Published in <i>In vitro</i> Cell Dev Biol-Plants)
6	<i>In vitro</i> organogenesis from root explants of <i>Citrus jambhiri</i>	2020-21	DBT Twinning project (Published in Plos One)

Products

Sl. No.	Products	Year of development	Project / Activity Name
1	84 value-added products were developed from underutilized fruits and vegetables from the NEH region of India	205-16	Under DBT twinning project 'Nutraceutical properties of underutilized fruits and vegetables of NEH region of India'
2	Development of extruded products from tree bean	2016-17	DBT Twinning project (Published in J Food Sci Technol)
3	Bay leaf beverage technology was commercialized through start-up entrepreneurship	2018-19	Under DBT twinning project 'Nutraceutical properties of underutilized fruits and vegetables of NEH region of India'
4	Development and Transfer of 5 processing technology of underutilized fruits and vegetables for commercialization	2018-19	Under DBT twinning project 'Nutraceutical properties of underutilized fruits and vegetables of NEH region of India'

15. Patents/Copyrights obtained (Add list and give a brief description): Nil

16. Any other information: -