

Curriculum vitae

Asosii Paul, Ph.D.

ORCID ID: orcid.org/0000-0003-3405-3680

Loop profile: 337410 (<http://loop.frontiersin.org/>)

Current Position: Assistant Professor

Education: Ph.D. in Biotechnology (CSIR-IHBT, Palampur; awarded by GNDU, Amritsar)
M.Sc. in Botany (Nagaland University, Lumami)

Specialty Area: Plant Molecular Physiology, Plant Abiotic Stress

Research/Academic Interest:

- a) Conservation and characterization of genetic resources of North-East India and their bioprospection for value addition
- b) Phenotypic plasticity and plant adaptation
- c) Mechanism of abiotic stresses tolerance in plants, with emphasis on
 1. Plant responses to combination of multiple abiotic stresses
 2. Difference in root and shoot biology
 3. Nutrients uptake and metabolism during abiotic stresses

Work experience

Position	Period	Institute
Assistant Professor	March, 2016 to present	Nagaland University, Nagaland.
RA-III	December, 2014 to March, 2016	National Institute of Plant Genome Research, New Delhi.
SRF	June, 2013 to December, 2014	National Institute of Plant Genome Research, New Delhi.
JRF-SRF-PAIII	2005 to 2012	CSIR-Institute of Himalayan Bioresource Technology, Palampur.

Research contribution:

Has done pioneering work to decipher the molecular basis of winter dormancy and study their expression regulation in tea [*Camellia sinensis* (L.) O. Kuntze]. The work not only showed the molecular basis of winter dormancy in tea, but also deciphered the mechanism of evergreen nature of tea, which was a long standing unsolved question in plant science (Paul and Kumar, 2011; Paul et al., 2014). The work has implications in modulating winter dormancy in tea. Cloned >30 full-length cDNAs and some of the target genes are being deployed to modulate winter dormancy in tea (Paul et al., 2012; Paul, 2012; Paul and Kumar, 2013, 2015; Paul et al., 2014).

Reviewer for Journals:

1. Critical Reviews in Biotechnology (Taylor and Francis)
2. Electronic Journal of Biotechnology (Elsevier)
3. Frontiers in Plant Science (Frontiers)
4. Gene (Elsevier)
5. Plant Physiology and Biochemistry (Elsevier)
6. Fazl Ali College Journal

Ongoing Research Projects

1. "Inventory of Wild Mushrooms of Nagaland, Nutritional Assessment, Cultivation of Few Commercially Viable Wild Edible Mushrooms and Products Development for Sustainable Livelihood of Rural Tribal". Role as PI; Grants in crore: 1.0 (INR); Funding agency: GBPNIHESD-NMHS, Almora, Uttarakhand. **Ref. No.: GBPNI/NMHS-2020-21/MG/TSP**
2. "Diversity and Molecular Characterization of Microsymbiont-Legume Association in Meghalaya and Nagaland for Developing Consortia of Microsymbionts with Wide Host Range". Role as Co-PI; Grants in Lakh: 35.31996 (INR); Funding agency: DBT, New Delhi. **Ref. No.: BT/PR24584/NER/95/762/2017**
3. "Inventory of Wild *Musa* of Nagaland, Nutritional Assessment and Production of Clonal Planting Materials of Few Commercially Viable Species". Role as Co-PI; Grants in Lakh: 70.896 (INR); Funding agency: GBPNIHESD-NMHS, Almora, Uttarakhand. **Ref. No.: NMHS/2017-18/MG36/20**

Publications:

Book Chapter

1. **Paul A**, Longchar B, Dkhar J (2021) Tropane Alkaloid Biosynthesis in Plants: Insights from Transcriptome Analysis. Srivastava V, Mehrotra S, Mishra S (Eds.): **Tropane Alkaloids - Pathways, Potential and Biotechnological Applications**. Chapter 8, page 133-156. Springer Nature Singapore Pte Ltd. **eBook ISBN: 978-981-334-535-5, DOI: 10.1007/978-981-33-4535-5**
2. **Paul A** (2019) Responses of Some Upland Rice Landraces of Nagaland to Dehydration Stress. Kalita JC, Sarma D, Medhi D, Sarma J, Gogoi P, Saha B (Eds.): **Bio-Resources of North East India**. Page 227-238. Purbayon Publication, Guwahati, Assam. Print ISBN: 9789388593274
3. Kumar S, **Paul A**, Bhattacharya A, Sharma RK, Ahuja PS (2012) Tea: Present Status and Strategies to Improve Abiotic Stress Tolerance. Tuteja N, Gill SS, Tiburcio AF, Tuteja R (Eds.): **Improving Crop Resistance to Abiotic Stress**. Volume 2. Chapter 54, page 1401-1424. Wiley-VCH Verlag GmbH & Co. KGaA, Germany. Print ISBN: 97835273

Research Papers

1. Deb CR, Khruomo N, **Paul A** (2019) Underutilized edible plants of Nagaland: a survey and documentation from Kohima, Phek and Tuensang district of Nagaland, India. **American Journal of Plant Sciences** 10: 162-178.
2. Pongener A, Deb CR, **Paul A** (2017) Wild, semi-domesticated and underutilized legumes of Nagaland, India. **Pleione** 11: 56-63.
3. **Paul A**, Rao S, Mathur S (2016) The α -crystallin domain containing genes: identification, phylogeny and expression profiling in abiotic stress, phytohormone response and development in tomato (*Solanum lycopersicum*). **Frontiers in Plant Sciences** 7: 426. doi: 10.3389/fpls.2016.00426

4. **Paul A**, Kumar S (2015). An *A20/ANI-zinc-finger domain containing protein* gene in tea is differentially expressed during winter dormancy and in response to abiotic stress and plant growth regulators. **Plant Gene** 1: 1-7. doi:10.1016/j.plgene.2014.12.003
5. **Paul A**, Jha A, Bhardwaj S, Singh S, Shankar R, Kumar S (2014). RNA-seq-mediated transcriptome analysis of actively growing and winter dormant shoots identifies non-deciduous habit of evergreen tree tea during winters. **Scientific Reports** 4: 5932. doi:10.1038/srep05932
6. **Paul A**, Singh S, Sharma S, Kumar S (2014). A stress-responsive *late embryogenesis abundant protein 7 (CsLEA7)* of tea [*Camellia sinensis* (L.) O. Kuntze] encodes for a chaperone that imparts tolerance to *Escherichia coli* against stresses. **Molecular Biology Reports** 41: 7191-7200. doi:10.1007/s11033-014-3602-y
7. **Paul A**, Kumar S (2013). *Dehydrin2* is a stress-inducible, whereas *Dehydrin1* is constitutively expressed but up-regulated gene under varied cues in tea [*Camellia sinensis* (L.) O. Kuntze]. **Molecular Biology Reports** 40: 3859-3863. doi: 10.1007/s11033-012-2466-2
8. **Paul A**, Muoki RC, Singh K, Kumar S (2012). *CsNAM-like protein* encodes a nuclear localised protein and responds to varied cues in tea [*Camellia sinensis* (L.) O. Kuntze]. **Gene** 502: 69-74. ISSN: 0378-1119
9. **Paul A**, Lal L, Ahuja PS, Kumar S (2012). *Alpha-tubulin (CsTUA)* up-regulated during winter dormancy is a low temperature inducible gene in tea (*Camellia sinensis* (L.) O. Kuntze). **Molecular Biology Reports** 39: 3485-3490. ISSN: 0301-4851
10. **Paul A**, Kumar S (2011). Responses to winter dormancy, temperature and plant hormones share gene networks. **Functional & Integrative Genomics** 11: 659-664. ISSN: 1438-793X
11. Muoki RC, **Paul A**, Kumar S (2012). A shared response of *thaumatin like protein, chitinase* and *late embryogenesis abundant protein3* to environmental stress in tea [*Camellia sinensis* (L.) O. Kuntze]. **Functional & Integrative Genomics** 12: 565-571. ISSN: 1438-793X
12. Muoki RC, **Paul A**, Kumari A, Singh K, Kumar S (2012). An improved protocol for the isolation of RNA from roots of tea (*Camellia sinensis* (L.) O. Kuntze). **Molecular Biotechnology** 52: 82-88. ISSN: 1073-6085
13. Ghawana S, **Paul A**, Kumar H, Kumar A, Singh H, Bhardwaj PK, Rani A, Singh RS, Raizada J, Singh K, Kumar S (2011). An RNA isolation system for plant tissues rich in secondary metabolites. **BMC Research Notes** 4: 85. ISSN: 1756-0500.
14. Singh K, Rani A, **Paul A**, Dutt S, Joshi R, Gulati A, Ahuja PS, Kumar S (2009). Differential display mediated cloning of *anthocyanidin reductase* gene from tea (*Camellia sinensis* (L.) O. Kuntze) and its relationship with the content of epicatechins. **Tree Physiology** 29: 837-846. ISSN: 0829-318X
15. Singh K, **Paul A**, Kumar S, Ahuja PS (2009). Cloning and differential expression of *QM like protein* homologue from tea [*Camellia sinensis* (L.) O. Kuntze]. **Molecular Biology Reports** 36: 921-927. ISSN: 0301-4851

Seminar/conferences/training attended

1. National e-Conference on “Bioresources and Sustainable Livelihood of Rural India” organised by Department of Botany, Nagaland University during September 28-29, 2020
2. Workshop on “Research Ethics, Paper Writing & IPR” organised by Department of Botany & Advance Level Institutional Biotech Hub, Nagaland University during November 14-15, 2019.

3. Workshop on "Skill to Entrepreneurship-The Next Level" sponsored by Institute of Bioresources and Sustainable Development, Imphal, DBT; organised by Biotech Park, Lucknow at Advanced Level Biotech Hub, St. Edmund's College, Shillong during March 12-15, 2019.
4. National Conference of Stakeholders on "Conservation, Cultivation, Resource Development and Sustainable Utilization of Medicinal Plants of North Eastern India" jointly organised by Department of Botany, Nagaland University and Society for Conservation and Resource Development of Medicinal Plants (SMP), New Delhi during March 06-07, 2019.
5. Workshop on "Skill and Entrepreneurial Development of the Tribal Youth" under the theme 'Value-addition to Rich Bio-Resources - with Special Reference to Medicinal and Aromatic Plants' organised by Advance Level Institutional Biotech Hub, Department of Botany, Nagaland University in collaboration with Biotech Park, Lucknow, UP, during July 25 - 28, 2018.
6. Hands on Training on "Genomics and Gene Expression Analysis" organised by Advance Level Institutional Biotech Hub, Department of Botany, Nagaland University during July 18 - 23, 2018.
7. Training Programme on "Handling Infectious Pathogens in BSL-3 Facility" (Hands-on training-cum-lecture symposium) held in BSL-3 Facility, School of Biotechnology, Jawaharlal Nehru University, New Delhi during April 17 - 19, 2018.
8. Short-Term Skill Development Training Program in Biotechnology for Student of North-East India on "Orchid Propagation" organised by Institutional Biotech Hub, Department of Botany, Nagaland University during November 16 - December 15, 2017.
9. Hands on Training on "Functional Genomics" organised by Institutional Biotech Hub, Department of Botany, Nagaland University during November 14 - 21, 2017.
10. National Seminar on "Advances in Biological Science Research" organised by Department of Botany, Nagaland University during February 28 - March 01, 2017.

Orientation and refresher course attended:

1. Winter School on "Bio-resources of North East India" organised by HRDC, Gauhati University, Guwahati during January 30-February 19, 2019.
2. 109th Orientation Programme organised by HRDC, Jawaharlal Nehru University, New Delhi during January 08-February 02, 2018.

Former Positions Held: Post-doctoral Research Associate (National Institute of Plant Genome Research, New Delhi)

E-mail: Paulchachei@rediffmail.com/ apaul@nagalanduniversity.ac.in