

CURRICULUM VITAE

Dr Raju Bharalee

Assistant Professor
Department of Molecular Biology and Biotechnology
Cotton College State Univeristy
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Educational Qualification

- | | |
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| 2012 | PhD in Biotechnology (GU)
Thesis title: Generation, analysis and identification of expressed sequence tags of differentially expressed genes of tea under water stress. |
| 2005 -2006 | Post MSc Certificate Course in Plant Genetic Engineering , MKU, Madurai, Tamil Nadu, India |
| 2002 – 2003 | M.Sc. Biotechnology , Gauhati University, Assam, India |

Personal Details

Date of Birth 1st March 1979.
Permanent Address S/O Mohan Bharali, Jamirah Kapow Gaon
Dibrugarh - 786001, Assam

Research Interest

Plant Genomics, Metagenomics, Functional Genomics of biotic and abiotic stress tolerance, Biofuels

Research projects

Molecular analysis of fruit development and ripening of *Hippophae salicifolia* of Sikkim Himalayas using High-throughput sequencing-based gene profiling (58.0 L), 2013-2016, Presently running at TERI, Guwahati.

Training

1. Short Term Training Program On Analytical Instruments, 15-17 March 2016, At Guwahati Biotech Park.
2. Hands on training on DNA sequencing and Fragment Analysis from Lab India, Gurgaon, Delhi, India.
3. Workshop on "Recent Trends in Bioinformatics", NEHU, Shillong, Meghalaya.
4. Training course on AFLP at TRA, Jorhat, Assam, India
5. Training on *In silico* characterization of proteins from sequences and molecular modelling approaches, CVSc. Khanapara from Nov 7-12, 2012
6. Workshop cum training programme on Next Generation Sequencing: Data analysis and annotation organized by Bioinformatics Centre, IISR, Kozhikode from 17-20th March, 2014.

Publications

1. Production of biodiesel from freshwater microalgae and evaluation of fuel properties based on fatty acid methyl ester profile- S. K. Sinha, A. Gupta & R. Bharalee., **Biofuels**, Volume 7, Issue 1, January 2016, pages 69-78, Taylor & Francis.
2. Molecular Landscape of *Helopeltis theivora* Induced Transcriptome and Defense Gene Expression in Tea - T. Bandyopadhyay ,B. Gohain, **R. Bharalee**, S. Gupta, P. Bhorali, S. K. Das, M. C. Kalita ,S. Das. August 2015, Volume 33, Issue 4, pp 1042-1057

3. Identification, cloning and heterologous expression of a new lectin like protein in tea- T. Bandyopadhyay, B. Gohain, **R. Bharalee**, P. Bhagawati, M. C. Kalita, S. Das. *J. of applied Res on Medicinal and Aromatic Plants*, Vol: 1(2)43-49, 2014.
4. Bioinformatics tools for development of fast and cost effective simple sequence repeat (SSR), and single nucleotide polymorphisms (SNP) markers from expressed sequence tags (ESTs)- S. Gupta, **R. Bharalee**, R. Das, D. Thakur. *African Journal of Biotechnology*, Vol. 12(30):4713-4721 (2013)
5. Molecular cloning, expression and computational analysis of a water stress inducible copper-containing amine oxidase gene (*CuAO*) from tea plant [*Camellia sinensis* (L.) O. Kuntze]. - **R. Bharalee**, S. Gupta, T. Bandyopadhyay, B. Gohain, N. Agarwala, M. C. Kalita, and S. Das. *African Journal of Biotechnology*, Vol. 11(89): 15547-15555 (2012).
6. Identification of drought tolerant progenies in tea by gene expression analysis - S. Gupta, **R. Bharalee**, P. Bhorali, T. Bandyopadhyay, B Gohain, N Agarwal, P Ahmed, H. Saikia, S. Borchetia, M. C. Kalita, A. K. Handique and S. Das. *Funct Integr Genomics*, 12(3): 543-63 (2012)
7. Molecular analysis of drought tolerance in tea by cDNA AFLP based transcript profiling - S. Gupta, **R. Bharalee**, P. Bhorali, S. K. Das, P. Bhagawati, T. Bandyopadhyay, B. Gohain, N. Agarwal, P. Ahmed, S. Borchetia, M. C. Kalita, A. K. Handique and S. Das. *Mol Biotechnol*, 2012
8. Isolation of functional RNA from heavily infested, wilted, and necrotic leaf tissues of tea with high polyphenol content - T. Bandyopadhyay, **R. Bharalee**, B. Gohain, S. Gupta, N. Agarwal, H. R. Singh, Setu Chakraborty, P. Bhorali, Mohan C. Kalita and S. Das. *J Agrcl Sci Technol, B2 (2012) 121-127*.
9. Molecular analysis and expression profiling of blister blight defense-related genes in tea- P. Bhorali, B. Gohain, S. Gupta, **R. Bharalee**, T. Bandyopadhyay, S. K. Das, N. Agarwal, H. R. Singh, P. Bhagawati, N. Bhattacharyya, P. Ahmed, S. Borchetia, S. Sarm, and S. Das. *Indian Journal of genetics and Plant Breeding (The)*, 72(2): 226-233 (2012).
10. Rubisco-bis-phosphate oxygenase (RuBP)- A potential housekeeping gene for qPCR assays in tea - B. Gohain, T. Bandyopadhyay, P. Bhorali, S. Borchetia, **R. Bharalee**, S. Gupta, N. Agarwala, N. Bhattacharyya, R. Singh, P. Bhagawati, P. Ahmed, M. C. Kalita, and S. Das. *African Journal of Biotechnology*, Vol. 11(51), pp. 11193-11199, 26 June, 2012
11. Heterologous expression and in-silico characterization of pathogenesis related protein1 (CsPR1) gene from *Camellia sinensis* - N. Agarwala, P. Bhorali, N. Bhattacharyya, **R. Bharalee**, T. Bandyopadhyay, B. Gohain, S. Gupta, M. Deka, S. Das. *J Biochem Tech* (2014) 5(2):674-678
12. Cloning and heterologous expression of a gene encoding lycopene-epsilon-cyclase, a precursor of lutein in tea (*Camellia sinensis* var *assamica*) - S. Borchetia, C. Bora, B. Gohain, P. Bhagawati, N. Agarwal, N. Bhattacharyya, **R. Bharalee**, P. Bhorali, T. Bandyopadhyay, S. Gupta, S. K. Das, H. R. Singh, P. Ahmed, M. Gogoi and S. Das. *African Journal of Biotechnology*, 2011, 10(32): 5934-5939.
13. *In vitro* clonal propagation of *camellia caesia* Rxb. and *Curcuma zedoaria* Rosc from rhizome bud explants - **R. Bharalee**, A. Das, M C Kalita, *J Plant Bioch Biotech*, 2005. 14:61 - 63
14. 2300 ESTs submitted to dbEST - (Gene Bank Acc. no. HS393200 to HS395561).
15. Six full length gene submitted to NCBI (Acession no. JN561073- JN561077 and JN391508)

Book

Title: Gene Networks Involved in Water Deficit stress Response in Tea: Towards genetic engineering and molecular breeding for drought stress tolerance. (LAP Lambert Academing Publishing, Germany, ISBN No. 978-3-659-29025-1)

Presented abstract in Conferences/seminar

1. **R. Bharalee**, S. Gupta, T. Bandyopadhyay, B. Gohain, P. Bhorali, S. K. Das, N. Agarwal, P. Ahmed, P. Bhagawati, N. Bhattacharyya, M.C. Kalita, S. Das (2011). Comparative analysis of drought responsive transcriptome in Tea (*Camellia sinensis*) genotypes with contrasting drought tolerance. 'International Symposium and Workshop on Functional Genomics and Structural Biology' (May, 09-13, 2011), University Putra Malaysia, Kuala Lumpur, Malaysia.

2. **R. Bharalee**, T. Bandyopadhyay, S. Das. (2009). Transcriptome and EST analysis in Drought Induced Tea – National seminar organized by Gauhati University, India, Feb, 2009.
3. **R. Bharalee**, A. Das, M. C. Kalita. (2005). In Vitro Clonal Propagation of *Curcuma caesia* Roxb. and *Curcuma zedoaria* Rosc. From Rhizome Bud Explants– National seminar organized by Gauhati University, India, 2005.
4. P. Bhorali, B. Gohain, S. Gupta, **R. Bharalee**, T. Bandyopadhyay, S. K. Das, N. Agarwal, H. R. Singh, P. Bhagawati, N. Bhattacharyya, P. Ahmed, S. Borchetia, S. Sarma and S. Das. (2012). Molecular Analysis and Expression Profiling of Blister Blight Defense-Related Genes in Tea. '*National Seminar on Plant Genetic Research for Eastern and North-eastern India*' (May, 11-12, 2012), ICAR Research Complex for NEH Region, Meghalaya, India.
5. S. Gupta, **R. Bharalee**, P. Bhorali, B. Gohain, T. Bandyopadhyay, S. K. Das, P. Ahmed, P. Bhagawati, N. Bhattacharya, R. Singh, N. Agarwal, S. Borchetia, A.K. Handique and S. Das (2010). 'Functionally relevant microsatellites in Biotic and Abiotic stress induced Unigenes of Tea'. 18th International Conference (Post ISCBS-2012) Perspective and Challenges in Chemical and Biological Sciences: Innovation Cross Roads. IASST, 28th – 30th January, 2012.
6. T. Bandyopadhyay, B. Gohain, **R. Bharalee**, P. Bhorali, S. Gupta, N. Agarwal, H. R. Singh, P. Bhagawati, N. Bhattacharya, P. Ahmed and S. Das (2011). Stress transcriptome and tea. '*World Tea Science Congress*' (Nov, 22-24, 2011), Tocklai Experimental Station, TRA, Jorhat, Assam, India.
7. P. Bhorali, B. Gohain, S. Gupta, **R. Bharalee**, T. Bandyopadhyay, S. Das, N. Agarwal, R. Singh, P. Bhagawati, P. Ahmed, N. Bhattacharyya, S. Borchetia, S. Sarma, and S. Das (2010). Defence Oriented Changes in the Tea Transcriptome upon Infection by *Exobasidium Vexans*. '*12th International PhD Student Symposium*' (Oct, 21-23, 2010), European Molecular Biology Laboratory (EMBL), Heidelberg, Germany.
8. P. Bhorali, B. Gohain, S. Gupta, **R. Bharalee**, T. Bandyopadhyay, S. Das, N. Agarwal, R. Singh, P. Bhagawati, P. Ahmed, N. Bhattacharyya, S. Borchetia, S. Sarma, and S. Das (2010). Screening for molecular markers associated with blister blight tolerance in tea through cDNA-AFLP based transcript profiling. '*International Conference on Frontiers in Biological Sciences*' (Oct, 01-03, 2010), NIT, Rourkela, India.
9. S. Gupta, **R. Bharalee**, P. Bhorali, B. Gohain, T. Bandyopadhyay, S. K. Das, P. Ahmed, P. Bhagawati, N. Bhattacharya, R. Singh, N. Agarwal, S. Borchetia, A.K. Handique and S. Das (2010). Molecular breeding and functional genomics for abiotic stress tolerance in tea. '*Asian Regional Conference on Systems Biology*' (Nov, 29- Dec, 01, 2010), Kuala Lumpur, Malaysia.
10. T. Bandyopadhyay, **R. Bharalee**, B. Gohain, S. Gupta, P. Bhorali, S. K. Das, N. Agarwal, H. R. Singh, P. Ahmed, P. Bhagawati, N. Bhattacharya, S. Borchetia and S. Das (2010). Herbivory Induced Transcriptome Changes in Tea. '*Plant Genetics, Genomics and Biotechnology*' (June, 06-10, 2010), Russian Academy of Sciences, Novosibirsk, Russia.
11. B. Gohain, T. Bandyopadhyay, **R. Bharalee**, S. Gupta, P. Bhorali, S. K. Das, N. Agarwal, H.R. Singh, P. Ahmed, P. Bhagawati, N. Bhattacharya, C. Borah, S. Borchetia, and S. Das (2010). Deciphering the molecular trajectory in Darjeeling tea due to abiotic and biotic stress. '*International Conference on Frontiers in Biological Sciences*' (Oct, 01-03, 2010), NIT, Rourkela.
12. B. Gohain, S. Borchetia, T. Bandyopadhyay, **R. Bharalee**, S. Gupta, P. Bhorali, S. K. Das, N. Agarwal, H.R. Singh, P. Ahmed, P. Bhagawati, N. Bhattacharya, C. Borah and S. Das (2010). Tea Quality: A Molecular Insight. '*6th Scandinavian Plant Physiologist Society PhD student conference*' (Sept, 02-05, 2010), University of Helsinki, Finland.
13. S. Borchetia, B. Gohain, C. Borah, N. Agarwal, P. Bhorali, T. Bandyopadhyay, S. Gupta, **R. Bharalee**, S.K. Das, H. R. Singh, P. Ahmed, P. Bhagawati, N. Bhattacharya and S. Das (2010). MeJa and salicylic acid induced expression of jasmonate biosynthetic genes and associated defence genes in metabolites of *Camellia assamica* ssp. *Lasiocalyx*. '*International Conference on Frontiers in Biological Sciences*' (Oct, 01-03, 2010), NIT, Rourkela.