

CURRICULUM VITAE



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ACDEMIC RECORDS

PhD	Molecular Biology and Biotechnology	2016	University of Colombo, Sri Lanka and collaboration with National University of Singapore. Thesis title: Fragile X syndrome in children with learning disabilities - A Molecular genetics and epidemiological study in Sri Lanka Supervisors: Professor H.N. Perera, Professor W.S.S. Wijesundera
B.Sc.	Biochemistry and Molecular Biology (Hons)	2010	University of Colombo, Sri Lanka Second Class Lower Division.

WORK EXPERIENCE

4 th July 2016-up to date	Postdoctoral Fellow at Agricultural Biotechnology Center, Faculty of Agriculture, University of Peradeniya
16 th November 2010- 31 st January 2016	Graduate Research Assistant at Department of Biochemistry and Molecular Biology, Faculty of Medicine, University of Colombo
24 th August 2010-13 th November 2010	Trainee at Ceylon Tea Board

RESEARCH EXPERIENCE

2016-up to date **As a postdoctoral fellow at Agricultural Biotechnology Center, University of Peradeniya, I have involved with several local and international Agriculturally important genetic projects**

- Isolation of local microbial consortia for efficient garbage recycling -National Research Council Funded Project (NRC SP 21-02)
- Implementation of the National Biosafety Framework in accordance with the Cartagena Protocol on Biosafety funded by Food and Agricultural Organization, United Nations.
- Genetic and Genomics work on *Cinnamon* as part of National Science Foundation, Sri Lanka funded project (SP/CIN/2016/01).
- Genetic diversity analysis of Mango and Pomegranate using ISSR, SSR, DNA barcoding.
- Genetic, Biochemical and Morphological diversity of selected *Centella asiatica* morphotypes.
- Genetic, Genomics and Biochemical work on *Santalum Album* as part of the Sri Lanka Council for Agricultural Research Project funded project (NARP/16/UP/AG/01).
- DNA finger printing of flora (*Strobilanthus*) and fauna (wild elephants) as part of a collaborative project with Department of Wild life Conservation, Sri Lanka.
- Genetic Diversity analysis of critically endangered rediscovered plant species *Crudia zeylanica* in Sri Lanka as part of a collaborative project with Department of Wild life Conservation, Sri Lanka.

2010-2016

PhD Research

- Fragile X syndrome in children with learning disabilities - A Molecular genetics and epidemiological study in Sri Lanka. It involved optimization of a low-cost PCR assay for screening of Fragile X syndrome and determination of prevalence of fragile X Syndrome in Sri Lanka. A part of my doctoral research was carried out at the National University of Singapore and I have gained considerable experience in novel techniques of Molecular Biology.

2009-2010

Undergraduate Research

- Development of a DNA based test method to sex Sri Lankan Magpie

During all these research project over eleven years I have gained considerable experience in many of the techniques involved in Molecular Biology and Biotechnology,

- **Isolation of DNA from human, animals, plants and microbes**
- **Isolation of RNA from plant and human**
- **Primer designing**
- **Conventional PCR, Methylation specific PCR, semi Quantitative PCR, Quantitative PCR, Reverse transcriptase PCR**
- **Melting curve analysis**
- **Cloning**
- **Northern and Southern hybridization**
- **Non radioactive labeling of DNA**
- **Library plating and screening**
- **Capillary electrophoresis/ fragment analysis**
- **DNA sequence analysis**
- **Plating**
- **Titrating phage libraries**
- **DNA barcoding**
- **SNP analysis**
- **Oxford Nanopore Sequencing**
- **Isolation of proteins**
- **Polyacrylamide gel electrophoresis**
- ***Agrobacterium* mediated transformation**
- **High Performance Liquid Chromatography**

Apart from that I have gained experiences in data analysis softwares including SPSS, PHYLIP and Bioinformatics data bases and softwares including NCBI, Ensemble, Uniport protein data base, Geneious, POPGENE32 and primer 3.

MENTORING EXPERIENCE

2019-upto date **Mentoring following research projects of final year undergraduates, Faculty of Agriculture, University of Peradeniya.**

- Diversity analysis of newly introduced red-pigmented *Aglaonema* cultivars, 2021
- Genetic diversity as revealed by Cytochrome C locus in inherently small indigenous cattle in Sri Lanka, 2021
- Beef adulteration in Kandy municipal council: Molecular Biological and Morphological identification, 2021
- Molecular and biochemical characterization of *Discorea app.* Landraces in Sri Lanka, 2021
- Comparative Study of Edible Portion of Different Gotukola (*Centella asiatica*) Morphotypes, 2020
- Morphological and Molecular characterization of selected Aloe germplasm in Sri Lanka, 2020
- The effect of media additives on *in-vitro* growth and assessment of the genetic diversity of seed propagated planting materials of Vanda orchids, 2020
- Effect of Different Management Practices on Tapping Panel Dryness, Development and Identifying Possible Early Detection Measures, 2019
- Phenotypic plastic responses in morphological traits of Dendrobium 'Phalaenopsis' in response to different shade levels, 2019
- Morphological and Genetic Diversity of Lotus (*Nelumbo nucifera*) Grown in Sri Lanka, 2019

TEACHING EXPERIENCE

2017-upto
date

Conducting following trainings, workshops and events at Agricultural Biotechnology Centre.

- Conducting Molecular Biology practical for undergraduates of the Dept. of Animal Science, Dept of Agriculture Biology series on 28th June and 2nd Aug 2022
- Conducting practical for workshop on “Detection and Identification of GMOs” for the staff members of the GMO testing labs at Industrial Training Institute, National Plant Quarantine Service and Sri Lanka Customs on May 27, 2019 and 13 and 14th December 2021.
- Conducting practical demonstration for undergraduates of the Dept. of Crop Science under 4100 series and undergraduates of Faculty of Allied Health Sciences 2020-2022.
- Conducting theory and practical sessions for two days training program on “Waste Management” for technical officers at the Dept. of Zoology, Faculty of Science, University of Peradeniya conducted on 2021 January 11 and 12th.
- Conducting practical for one day training workshops on “genetically modified organisms Inspection, Monitoring and Sampling” for food and feed inspectors, seed inspectors, plant quarantine officials and custom officials for ten days 2019 December 16th to 20th and 2020 September 21st to 25th.
- Conducting practical demonstrations for one-day program on “Awareness of Biosafety” to undergraduate students of University of Peradeniya and Ordinary Level (O/L) and Advanced Level (A/L) students and organized in parallel with iPURSE 2019 conducted on 11-12th September 2019.
- Practical demonstration for “Agtech” exhibition, Faculty of Agriculture, University of Peradeniya 2018 under the Agricultural Biotechnology centre stall.
- Conducting practical for hundred-hour certificate course on “Fundamentals of Molecular Biology and Biotechnology” conducted for undergraduate and post graduates 2017-2019.

PUBLICATIONS IN PEER REVIEWED JOURNALS

1. Marasinghe, M.S.L.R.P., Nilanthi, R.M.R., Hathurusinghe, H.A.B.M., Sooriyabandara, M.G.C., **Chandrasekara, C.H.W.M.R.B.**, Jayawardana, K.A.N.C., Kodagoda, M.M., Rajapakse, R.C. and Bandaranayake, P.C.G., 2021. Revisiting traditional SSR based methodologies available for elephant genetic studies. *Scientific reports*, *11*(1), pp.1-13. <https://doi.org/10.1038/s41598-021-88034-9>
2. Liyanage, N.M., **Chandrasekara, C.H.W.M.R.B.** and Bandaranayake, P.C., 2021. protocol for obtaining high-quality total RNA from cinnamon (*Cinnamomum zeylanicum Blume*). *3 Biotech*, *11*(4), pp.1-8. <https://doi.org/10.1007/s13205-021-02756-1>
3. **Chandrasekara, C.H.W.M.R.B.**, Naranpanawa, D.N.U., Bandusekara, B.S., Pushpakumara, D.K.N.G., Wijesundera, D.S.A. and Bandaranayake, P.C., 2021. Universal barcoding regions, rbc L, mat K and trn H-psb A do not discriminate *Cinnamomum* species in Sri Lanka. *PloS one*, *16*(2), p.e0245592. e0245592. <https://doi.org/10.1371/journal.pone.0245592>
4. Naranpanawa, D.N.U., **Chandrasekara, C.H.W.M.R.B.**, Bandaranayake, P.C.G. and Bandaranayake, A.U., 2020. Raw transcriptomics data to gene specific SSRs: a validated free bioinformatics workflow for biologists. *Scientific reports*, *10*(1), pp.1-16. <https://doi.org/10.1038/s41598-020-75270-8>
5. **Chandrasekara, C.H.W.M.R.B.**, Sumanarathne, R.A.P.I. and Bandaranayake, P.C.G., 2020. Centellaasiatica Morphotypes Differ Genetically as well as Macronutrients Content, Total Phenolic Content and Chemical Fingerprints of Leaves. *Journal of Agricultural Sciences–Sri Lanka*, *15*(1). <http://doi.org/10.4038/jas.v15i1.8673>
6. Pathirana, C.K., **Chandrasekara, C.H.W.M.R.B.**, Attanayake, S.R.M.R., Weerakkody, W.A.P., Eeswara, J.P. and Bandaranayake, P.C.G., 2018. Optimization of DNA extraction and PCR protocols for plants with high Phenolics: Bael, Mango, Pomegranate as examples. *Ceylon Journal of Science*, *47*(1), pp.43-48. <http://doi.org/10.4038/cjs.v47i1.7485>
7. **Chandrasekara, C.H.W.M.R.B.**, Wijesundera, S., Chong, S.S. and Perera, H.N., 2017. Prevalence of Fragile X Syndrome among children receiving special education and carrier states in first degree relatives. *Ceylon Med J*, *62*(2), pp.92-96.: <http://doi.org/10.4038/cmj.v62i2.8473>.
8. **Chandrasekara, C.H.W.M.R.B.**, Wijesundera, S. and Perera, H., 2016. Fragile X syndrome in children with learning difficulties and the diagnostic dilemma. *Sri Lanka Journal of Child Health*, *45*(1).[.doi.org/ 10.4038/sljch. V 45i1.8084](https://doi.org/10.4038/sljch.V45i1.8084).

9. **Chandrasekara, C.H.W.M.R.B.**, Wijesundera, W.S., Perera, H.N., Chong, S.S. and Rajan-Babu, I.S., 2015. Cascade screening for fragile X syndrome/CGG repeat expansions in children attending special education in Sri Lanka. *PLoS one*, 10(12), p.e0145537. doi: 10.1371/journal.pone.0145537
10. **Chandrasekara, C.H.W.M.R.B.**, Sulochana, W.W. and Hemamali, N.P., 2013. Polymerase chain reaction optimization for amplification of Guanine-Cytosine rich templates using buccal cell DNA. *Indian journal of human genetics*, 19(1), p.78-83 doi:10.4103/0971-6866.112898.

RESEARCH COMMUNICATIONS

1. Wijethunga P.W.C.M., Benaragama C.K., Bandaranayake P.C.G. **Chandrasekara C.H.W.M.R.B.** Diversity analysis of Newly Introduced Red-pigments Aglonema Cultivars. Proceedings of the Faculty of Undergraduate Research Symposium, 13tg August 2021. Pp17
2. Disanayake D.M.S.K., Nissanka S.P., **Chandrasekara C.H.W.M.R.B.** Bandarnayake P.C.G. Sri Lankan Yams: Genetics and Biochemical Diversity among the Accessions. Proceedings of the Faculty of Undergraduate Research Symposium, 13tg August 2021. Pp59
3. **Chandrasekara, C.H.W.M.R.B.**, H.A.B.M Hathurusinghe, Bandaranayake, P.C.G. Consumer preference for medicinal plants from family Apiaceae; *Centella asiatica*, *Oenanthe Javanica* and *Hydrocotyle bonariensis*. Asian Symposium on Medicinal Plants, Spices and other Natural Products XVI 14th December 2018.pp 188
4. **Chandrasekara, C.H.W.M.R.B.**, Pushpakumara, D.K.N.G., Bandaranayake, P.C.G. DNA extraction from *Cinnamomum Zelanicum*, Cinnamon: A simple and efficient method. Young Scientist Forum, Proceedings of the 7th YSF Symposium 18th January 2018. pp 22-25.
5. **Chandrasekara, C.H.W.M.R.B.**, Bandaranayake, P.C.G. Assessment of total phenolic content and antioxidant activity of different *Centella asiatica* (Gotukola) morphotypes. International symposium on Traditional and complementary medicine 17th August 2017. pp 130.
6. **Chandrasekara, C.H.W.M.R.B.**, Wijesundera, W.S.S., Perera. H.N., Chong, S.S., Babu, I.S.R. Screening first degree relatives for fragile X syndrome carrier status. Proceedings of the Annual Research Symposium, University of Colombo October 2015; p103.

7. **Chandrasekara, C.H.W.M.R.B.**, Wijesundera, W.S.S., Perera, H.N. *In silico* analysis of *FMR 1* gene to identify and prioritize the single nucleotide polymorphisms for Fragile X syndrome. Sri Lanka Association for the Advancement of Science Proceedings of the 70th Annual Sessions December 2014 Part 1; p107.
8. **Chandrasekara, C.H.W.M.R.B.**, Wijesundera, S.S., Perera, H.N., Chong, S.S., Babu, I.S.R. Screening for CGG repeat expansions in *FMRI* gene among children attending special schools in Sri Lanka. Proceedings of the Annual research symposium, University of Colombo 20th November 2014; p143.
9. **Chandrasekara, C.H.W.M.R.B.**, Wijesundera, S.S., Perera, H.N., Chong, S.S., Genetic analysis of the FMR1 gene for fragile X phenotypes among children attending Mental Health Clinic at the Lady Ridgeway Hospital. International conference on birth defects November 2014; p30.
10. **Chandrasekara, C.H.W.M.R.B.**, Wijesundera, S.S., Perera, H.N. Screening for fragile X syndrome among children presenting with learning difficulties. Asia Pacific Academic Consortium for Child Health January 2012; p16-17.
11. **Chandrasekara, C.H.W.M.R.B.**, Wijesundera, S.S., Perera, H.N. PCR amplification of the GC rich region of the FMR 1 gene. Proceedings of the 68th Annual sessions of Sri Lanka Association for the Advancement of science 2012 Part 1; p14.

AWARDS

- 2017 -National Research Council Merit award for Scientific publications.
- 2015 - Award for the poster presentation-third place at the Proceedings of the Annual Research Symposium, University of Colombo.
- 2014 - Award for the best oral presentation at the Proceedings of the Annual research symposium, University of Colombo.

OTHER CERTIFICATIONS

- Certificate for the participation of international training on “Detection and Identification of GMOs” conducted by the Export Inspection Agency (EIA), Kochi, a leading GMO detection laboratory on June 13-16, 2022.
- Certificate for the participation of a virtual international training on “Detection and Identification of GMOs” conducted by the Export Inspection Agency (EIA), Kochi, a leading GMO detection laboratory on October 4-8, 2021.
- Certificate for the participation of online training programme on “Internal Auditing of Laboratory Quality Management System as per ISO/IEC 17025:2017” conducted by Sri Lanka Accreditation Board on 12- 14 October 2021.
- Certificate for the participation of joint workshop under the theme; “Genetic Resources in Livestock Farming and Agriculture” organized by the National science Foundation, Sri Lanka and Japan Science and Technology Agency (JST) in Tokyo 10th to 12th October, 2018.
- Certificate for participation of a workshop on “High quality PhDs and Presenting Data” conducted by the Research Promotion and Facilitation Centre (RPFC) held on 27th November 2014.
- Certificate for participation of a workshop on “Introduction to post-graduate research” conducted by Higher Education for Twenty First century (HETC) Project held on 6th and 7th February 2013.

PROFESSIONAL TRAININGS

- Participated in international training on “Detection and Identification of GMOs” conducted by the Export Inspection Agency (EIA), Kochi, a leading GMO detection laboratory on June 13-16, 2022.
- Participated in virtual international training on “Detection and Identification of GMOs” conducted by the Export Inspection Agency (EIA), Kochi, a leading GMO detection laboratory on October 4-8, 2021.
- Participated in virtual training programme on “Internal Auditing of Laboratory Quality Management System as per ISO/IEC 17025:2017” conducted by Sri Lanka Accreditation Board on 12- 14 October 2021.
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PROFESSIONAL ACTIVITIES

- Member of the Sri Lanka Association for the Advancement of Science (SLAAS).
- Member of the Sakura Science Club.
- Member of the technical evaluation committee for suppliers of laboratory equipment during the establishment of full-fledged GM testing labs under the project on Implementation of the National Biosafety Framework in accordance with the Cartagena Protocol on Biosafety funded by Food and Agricultural Organization, United Nations.

REFEREES

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