

## Curriculum Vitae - D.M.S.B. Dissanayaka



Dr. D.M.S.B. Dissanayaka  
Senior Lecturer  
Department of Crop Science, Faculty of Agriculture  
University of Peradeniya, Sri Lanka

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**Name in Full:** Dissanayaka Mudiyansele Samantha Bandara Dissanayaka  
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**Date of Birth:** 11<sup>th</sup> April 1984 **Civil Status:** Married

### Educational Qualifications:

- Ph.D. in Agriculture, Graduate School of Biosphere Science, Hiroshima University, Japan (2015-2018)
- M.Sc in Agriculture, Graduate School of Biosphere Science, Hiroshima University, Japan (2013-2015)
- M.Sc in Crop Science, Post Graduate Institute of Agriculture, University of Peradeniya, Sri Lanka (2011-2012)
- B.Sc in Agricultural Technology & Management, Faculty of Agriculture, University of Peradeniya, Sri Lanka (2006-2010)

### Work Experience:

- (i) Designation – Research Assistant  
Department of Crop Science, Faculty of Agriculture, University of Peradeniya, Sri Lanka (Since October 2010 to March 2012)
- (ii) Designation - Lecturer  
Department of Crop Science, Faculty of Agriculture, University of Peradeniya, Sri Lanka (Since March 2012 to March 2017)
- (iii) Designation – Senior Lecturer (Grade II)  
Department of Crop Science, Faculty of Agriculture, University of Peradeniya, Sri Lanka (Since March 2017 to date)

## **Academic Distinctions and Awards:**

- Annual Research Excellence Award - 2018 in recognition of the outstanding research contribution (Category I – Probationary Lecturer) on the recommendation of the Faculty of Agriculture, University of Peradeniya
- National Research Council Merit Award for Scientific Publication in 2017 offered from the National Research Council of Sri Lanka
- Presidential Award for Scientific Publication in 2015 and 2018 for excellence in research awarded by the President of Sri Lanka and organized by the National Research Council
- Japanese Government Monbukagakusho Scholarship from 2012 to 2017 to carryout post graduate studies in Hiroshima University, Japan
- Hiroshima University Excellent Student Award in 2013 (This was awarded in recognition of diligence and outstanding performance during the M.Sc program in Hiroshima University, Japan)
- Prof. Y.D.A. Senanayake Gold Medal for Crop Science in 2010 (This was awarded for the most outstanding performance in the disciplines of field crops, horticultural crops, plantation crops, and industrial crops by the Faculty of Agriculture, University of Peradeniya, Sri Lanka)

## **Teaching:**

### **Undergraduate Level**

Engage in teaching CS3208-Crop Physiology, CS 1201-Principles of Crop Production, CS 2202-Handling of Products from Perennial, Field, and Horticultural Crops, CS 4104-Scientific Research and Communication in Crop Science, CS 4112-Advanced Field Crop Production, and CS 4113-Urban Agriculture to undergraduate students at the Faculty of Agriculture, University of Peradeniya, Sri Lanka

### **Postgraduate Level**

Engage in teaching CS 5133-Plant Nutrient Management in Horticultural Crops, CS 5101-Principles of Crop Production, CS 5131-Tropical Field Crop Production to postgraduate students at the Postgraduate Institute of Agriculture, University of Peradeniya, Sri Lanka

### **Editorial Works:**

- Chief Editor - Young Scientists Forum (YSF) Thematic Publication “Multisectoral Approaches to Accelerate Economic Transformation in the Face of Crisis in Sri Lanka”, National Science and Technology Commission, Sri Lanka ([https://www.researchgate.net/publication/367799692\\_YSF\\_Thematic\\_Publication-2023](https://www.researchgate.net/publication/367799692_YSF_Thematic_Publication-2023))
- Chief Editor - Proceedings of the 9<sup>th</sup> YSF Symposium (2020), Young Scientist Forum, National Science and Technology Commission, Sri Lanka (ISBN: 978-955-8630-14-3)
- Editorial Board Member- Proceedings of the 10<sup>th</sup> YSF Symposium (2022), Young Scientist Forum, National Science and Technology Commission, Sri Lanka (ISBN: 978-955-8630-16-7)
- Editor-Agroecology – Biome Magazine, Center for Environmental Studies, University of Peradeniya
- Editorial Board Member - Proceedings of the 6<sup>th</sup> Faculty of Agriculture Undergraduate Research Symposium, University of Peradeniya (ISSN: 24207683)

**Positions:**

- Joint Secretary, Young Scientist Forum, National Science & Technology Commission, Sri Lanka (2022)
- Secretary, Board of Study in Crop Science, Postgraduate Institute of Agriculture, University of Peradeniya, Peradeniya (2022 Jan. to date)
- Chairman, Publications and Public Relations Committee, Faculty of Agriculture, University of Peradeniya (2022)
- Steering Committee Member- Young Scientist Forum, National Science & Technology Commission, Sri Lanka (2019-2022)
- Secretary, Publications and Public Relations Committee, Faculty of Agriculture, University of Peradeniya (2021)
- Secretary, Peradeniya University Agriculture Teachers Association (PUATA), Faculty of Agriculture, University of Peradeniya (2021)
- Senior Academic Sub-Warden - Marcus Fernando Hall, University of Peradeniya (2020-2021)

**Memberships:**

- Young Scientist Forum, National Science and Technology Commission (since 2018)
- The Institute of Biology, Sri Lanka (since 2019)
- Japanese Society of Soil Science and Plant Nutrition (since 2013)

**Research Interest:**

Yield determining physiological processes of crops  
Agronomy of field crops  
Plant nutritional physiology with special emphasis on Nitrogen and Phosphorus  
Ecosystem nutrition  
Nutrient dynamics in rhizosphere  
Nutritional security under changing climate  
Cropping systems

**Research Grants Received:**

(1) Peradeniya University Research Grant- 2019: Principal Investigator

Title of the project:

Exploring phosphorus nutrition dynamics and physiological responses of mung bean to drought conditions

(2) Development Oriented Research Grants – 2019 under World Bank funded AHEAD (Accelerating Higher Education Expansion and Development) Grant Scheme: Co-investigator

Title of the project:

Spatial distribution of mineral elements and metalloids in rice fields, and its relation with the productivity and quality of rice grains in Sri Lanka

**Reviewer for SCI Journals:**

Serving as the reviewer for international SCI journals - Plant and Soil, Annals of Botany, Tropical Plant Biology, BMC Plant Biology, Soil Science and Plant Nutrition, Frontiers in Sustainable Food Systems, Agronomy-MDPI, Agriculture-MDPI, Materials-MDPI, Sustainability-MDPI and several local Journals in Sri Lanka

## Research Publications:

### Peer-reviewed Journal Articles

1. Kadupitiya H., Madushan R.N.D, Gunawardhane D, Sirisena D, Rathnayake U, **Dissanayaka D.M.S.B**, Ariyaratne M, Marambe B, Suriyagoda L (2022) Mapping productivity-related spatial characteristics in rice-based cropping systems in Sri Lanka. *Journal of Geovisualization and Spatial Analysis*. doi: 10.1007/s41651-022-00122-0
2. Jayamanna H.H.P, Janananda J.S.M.N, Widanagamage D, Ranil R.H.G, **Dissanayaka D.M.S.B** (2022) Inter-specific competition between finger millet and Guinea grass for growth and nutrient uptake under nutrient-limited conditions. *Journal of Crop Improvement* 37 (1): 25-40
3. **Dissanayaka D.M.S.B**, Ghahremani M, Siebers M, Wasaki J, Plaxton W.C (2021) Recent insights into the metabolic adaptations of phosphorus deprived plants. *Journal of Experimental Botany* 72 (2): 199–223
4. **Dissanayaka D.M.S.B**, Rankoth L.M, Gunathilaka W.M.N.D, Prasantha B.D.R, Marambe B (2021) Utilizing food legumes to achieve iron and zinc nutritional security under changing climate. *Journal of Crop Improvement* 35 (5): 700-721
5. Ranil R.H.G, Chamara R.M.S.R, **Dissanayaka D.M.S.B**, Eeswara J.P, Pushpakumara D.K. N.G, Wijesuriya G, Jayasekara I.G.R.I (2021) Potential of spineless *Lasia spinosa* as a neglected indigenous vegetable. *International Journal of Vegetable Science*. 28 (2): 170-179
6. Thennegedara T.G.R.M. and **Dissanayaka D.M.S.B** (2021) Phosphorus mobilizing capacity of selected grain legumes grown under phosphorus-deficient conditions. *Tropical Agricultural Research*, 32(4): 380–389
7. Kadupitiya H, Madushan R , Rathnayake U, Thilakasiri R, **Dissanayaka S**, Ariyaratne M, Marambe B, Nijamudeen M, Sirisena D, Suriyagoda L (2021). Use of smartphones for rapid location tracking in mega scale soil sampling. *Open Journal of Applied Sciences*. 11: 239-253
8. **Dissanayaka D.M.S.B**, Wasaki J (2021) Complementarity of two distinct phosphorus acquisition strategies in maize-white lupine intercropping system under limited phosphorus availability. *Journal of Crop Improvement*. 35:2, 234-249
9. **Dissanayaka D.M.S.B**, Plaxton W.C, Lambers H, Siebers M, Marambe B, Wasaki J (2018) Molecular mechanisms underpinning phosphorus use efficiency in rice. *Plant Cell and Environment* 41: 1483-1496
10. **Dissanayaka D.M.S.B**, Nishida S, Tawaraya K, Wasaki J (2018) Organ-specific allocation pattern of acquired phosphorus and dry matter in two rice genotypes with contrasting tolerance to phosphorus deficiency. *Soil Science and Plant Nutrition* 64 (3): 282-290

11. Nishida S, **Dissanayaka D.M.S.B**, Honda S, Tateishi Y, Chubae M, Maruyama H, Tawaraya K, Wasaki J (2017) Identification of genomic regions associated with low phosphorus tolerance in japonica rice (*Oryza sativa* L.) by QTL-Seq. *Soil Science and Plant Nutrition* 64 (3): 278-282
12. **Dissanayaka D.M.S.B**, Maruyama H, Nishida S, Tawaraya K, Wasaki J (2017) Landrace of japonica rice, Akamai exhibits enhanced root growth and efficient leaf phosphorus remobilization in response to limited phosphorus availability. *Plant and Soil* 414: 327-338
13. **Dissanayaka D.M.S.B**, Wickramasinghe W.M.K.R, Marambe B, Wasaki J (2017) Phosphorus-mobilization strategy based on carboxylate exudation in lupin (*Lupinus*, Fabaceae): A mechanism facilitating the growth and phosphorus acquisition of neighboring plants under phosphorus-limited conditions. *Experimental Agriculture* 53: 308-319
14. **Dissanayaka D.M.S.B**, Maruyama H, Masuda G, Wasaki J (2015) Interspecific facilitation of P acquisition in intercropping of maize with white lupin in two contrasting soils as influenced by different rates and forms of P supply. *Plant and Soil* 390: 223-236
15. Sooriyagoda L.D.B, Ranil R.H.G, **Dissanayaka D.M.S.B**, Weerakkody W.A.P (2012) The sustainability of the intensive vegetable farming systems in the Up-country region of Sri Lanka: A situation assessment. *Chronica Horticulturae* 52(4): 14-17
16. **Dissanayaka D.M.S.B**, Marambe B (2011) Impact of post-emergence herbicides and inundation on control of weedy rice (*Oryza sativa* f. spontanea). *Sri Lankan Journal of Agricultural Sciences* 48: 11-17

### Book Chapters

1. Wasaki J, **Dissanayaka D.M.S.B** (2021) Intercropping to maximize root–root interactions in agricultural plants: Soil–root interface processes. In: Rengel Z, Ivica Djalovic I, eds. *The Root Systems in Sustainable Agricultural Intensification*. Wiley-Blackwell, Hoboken, pp 289-307
2. Dissanayake PAKN, **Dissanayaka DMSB**, Rankoth LM, Abeysinghe G (2023) Waste management challenges in developing countries. In: Bamunuarachchige T.C., de Zoysa H.K.S, eds. *Waste Technology for Emerging Economies*. CRC Press, Taylor and Francis Group.
3. **Dissanayaka D.M.S.B**, Marambe B (2020) Legume-based cropping systems to sustain nutrient efficiency of farming systems under changing climate In: Caldera H.I.U, Perera S.A.C.N, eds. *Adapting to Climate Change: A Sri Lankan Perspective*. The Institute of Biology, Sri Lanka. Sanduni Printers, Peradeniya. pp 100-116.

### Conference Proceedings (published as abstracts)

1. Neththasinghe N.A.S.A, Karunarathna A.K, **Dissanayaka D.M.S.B** (2021) Influence of Gliricidia dried biochar amendment on rhizosphere nutrient availability and nutrient uptake of soybean: a column study. *Proceedings of the International Symposium on Agriculture and Environment, University of Ruhuna, Sri Lanka*. pp.19
2. Abeysinghe A.H.M.N.P, Gunathilaka W.M.N.D, Weerasinghe K.W.L.K, Ariyaratne M, Marambe B, **Dissanayaka D.M.S.B** (2021) Phosphorus uptake and use efficiency of mung bean in response to moisture and phosphorus co-limitation. *Proceedings of the International Symposium on Agriculture and Environment, University of Ruhuna, Sri Lanka*. pp.28

3. Janananda J.S.M.N.L, **Dissanayaka D.M.S.B**, Ranil R.H.G, Suriyagoda L.D.B (2021) Growth and yield response of tomato and cowpea cultivated under moisture stress during reproductive growth. Proceedings of the 7<sup>th</sup> Faculty of Agriculture Undergraduate Research Symposium held in Faculty of Agriculture, University of Peradeniya, Peradeniya, Sri Lanka, 13th August 2021 pp. 36
4. Jayamanna H.H.P, **Dissanayaka D.M.S.B**, Ranil R.H.G, Marambe B, Sivananthawerl T (2021) Inter-specific competition between *Eleusine coracana* and *Panicum maximum* for nutrient uptake under nutrient-limited soil conditions. Proceedings of the 7<sup>th</sup> Faculty of Agriculture Undergraduate Research Symposium held in Faculty of Agriculture, University of Peradeniya, Peradeniya, Sri Lanka, 13th August 2021 pp. 41
5. Widanagamage D, **Dissanayaka D.M.S.B**, Ranil R.H.G, Suriyagoda L.D.B (2021) Root growth plasticity of finger millet and cowpea in response to heterogeneous nutrient availability. Proceedings of the 7<sup>th</sup> Faculty of Agriculture Undergraduate Research Symposium held in Faculty of Agriculture, University of Peradeniya, Peradeniya, Sri Lanka, 13th August 2021 pp. 57
6. Madushan N.D.R, Herath H.M.N.M, Kadupitiya H.K, Rathnayake W.M.U.K, **Dissanayaka D.M.S.B**, Ariyaratne M, Marambe B, Sirisena D.N, Suriyagoda L.D.B (2020) Sample survey to identify land-use pattern of rice-based cropping systems in Sri Lanka. Proceedings of the 6<sup>th</sup> International Conference on Dry Zone Agriculture (ICDA 2020). Faculty of Agriculture, University of Jaffna. pp 36
7. Kadupitiya H.K, Madushan N.D.R, Rathnayake W.M.U.K, Thilakasiri K.R, **Dissanayaka D.M.S.B**, Ariyaratne M, Marambe B, Najamudeen M.S, Sirisena D.N, Suriyagoda L.D.B (2020) Smartphone based effective navigation method for sample collection over a large geographical area. Proceedings of the 40<sup>th</sup> Annual sessions. The Institute of Biology. pp 55
8. Neththasinghe N.A.S.A, Karunarathna A.K, **Dissanayaka D.M.S.B** (2019) Rhizosphere nutrient availability and growth response of soybean as affected by biochar application. Proceedings of the 6<sup>th</sup> Faculty of Agriculture Undergraduate Research Symposium, University of Peradeniya, Peradeniya. pp 44
9. Abeysinghe A.H.M.N.P, Gunathilaka W.M.N.D, Weerasinghe K.W.L.K, **Dissanayaka D.M.S.B** (2019) Phosphorus nutrition dynamics of mung bean to moisture and phosphorus limited conditions in reproductive growth. Proceedings of the 6<sup>th</sup> Faculty of Agriculture Undergraduate Research Symposium, University of Peradeniya, Peradeniya. pp 41
10. Thennegedara T.G.R.M, Hettigedara H.M.P.T.K, **Dissanayaka D.M.S.B** (2019) Exploring phosphorus mobilizing capacity of selected grain legumes in limited phosphorus availability. Proceedings of the 6<sup>th</sup> Faculty of Agriculture Undergraduate Research Symposium, University of Peradeniya, Peradeniya. pp 29
11. Subasinghe M.H.L.R, **Dissanayaka D.M.S.B**, Mohotti A.J (2019) Evaluation of phosphorus dynamics in relation to cluster roots of *Gravellea robusta* L. Proceedings of the 39<sup>th</sup> Annual sessions. The Institute of Biology. pp 80

12. Indrachapa C.A.I, Ranil R.H.G, **Dissanayaka D.M.S.B.** Chamara R.M.S.R, Suriyagoda L.D.B (2019) Productivity enhancement of foxtail millet-green gram intercropping system: a step towards bringing foxtail millet back to the plate of Sri Lanka. Proceedings, Symposium on Agrobiodiversity for Climate Change Adaptation, Food and Nutrition. Plant Genetic Resource Centre, Gannoruwa. pp 32
13. **Dissanayaka D.M.S.B**, Sueyoshi M, Tateishi Y, Nishida S, Maruyama H, Tawaraya K, Wasaki J (2018) Phosphorus acquisition and use efficiency of two Japonica rice cultivars with contrasting tolerance to P deficiency. 6<sup>th</sup> symposium on Phosphorus in Soils and Plants (PSP6). Leuven, Belgium. pp 170
14. **Dissanayaka D.M.S.B**, Nishida S, Tawaraya K, Wasaki J (2017) Response to phosphorus deficiency of two rice genotypes with contrasting tolerance is determined by plasticity of root growth and leaf phosphorus remobilization. 18th International Plant Nutrition Colloquium (IPNC), Copenhagen, Denmark. pp 500-501
15. **Dissanayaka D.M.S.B**, Maruyama H, Masuda G, Wasaki J (2014) Dynamics of phosphorus fractions in the rhizosphere of maize in intercropping cultivation system with white lupin as influenced by heterogeneous phosphorus rates and forms. Annual meeting of the Japanese Society of Soil Science and Plant Nutrition (JSSSPN) Vol.60: pp 103
16. **Dissanayaka D.M.S.B**, Maruyama H, Wasaki J (2013 September) Effects of intercropped white lupin on growth and Phosphorus uptake of maize. Annual meeting of the Japanese Society of Soil Science and Plant Nutrition (JSSSPN). Vol.59: pp 203
17. Wasaki J, **Dissanayaka D.M.S.B**, Irie S, Uewaki Y, Nakano Y, Maruyama H, Kouno K (2013) Effects of intercropped white lupin on the growth and P accumulation of main crop plants. *In*: XVII. International Plant Nutrition Colloquium and Boron Satellite Meeting Proceedings Book, Sabanci University, Istanbul. ISBN 978-605-4348-62-6

#### **Research student supervision:**

By March 2023, I have supervised 12 Undergraduate Research Projects and currently serving as the co-supervisor of a Ph.D. student

I do hereby declare that the above particulars furnished by me are true & accurate to the best of my knowledge.



D.M.S.B. Dissanayaka

2<sup>nd</sup> May 2023