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*Microbial Biotechnology Unit*  
*National Institute of Fundamental Studies*  
*Hantana Road, Kandy, Sri Lanka*  
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**CURRENT POSITION:**

Senior Research Fellow, National Institute of Fundamental Studies, Hantana Road,  
Kandy, Sri Lanka

**EDUCATION:**

**Ph.D. (Soil Science) 2006** University of Peradeniya, Sri Lanka.

**Title of the thesis:** Effect of soil organic matter on nutrient availability under different land use patterns with special emphasis on the role of carbohydrates.

**M.Phil. (Botany) 1997** University of Peradeniya, Sri Lanka.

**Title of the thesis:** Improvement of the productivity of *Paraserianthes falcataria* (L) Nielsen on degraded tea lands in the mid country of Sri Lanka.

**B.Sc. (Honors) Botany 1992** University of Peradeniya, Sri Lanka.

**POST DOCTORAL POSITIONS:**

Visiting Research fellow- School of Environmental Science, Murdoch University,  
Australia

Visiting Research fellow- World forestry Center, Oregon, USA

**RECENT PUBLICATIONS :**

**Ratnayake, R. R.,** Karunaratne, S. B., Yogenthiran, N., Rajapaksha, R.P.S.K., Gnanavelrajah, N. (2016). Digital mapping of soil organic carbon contents in paddy growing soils in Northern Sri Lanka. *Geoderma Regional* 7, 167-176.

Hossain, M. F., **Ratnayake, R. R.**, Meerajini, K., Kumara, K.A.W. (2016) Antioxidant Properties in Some Selected Cyanobacteria Isolated from Fresh Water Bodies of Sri Lanka, *Food Science and Nutrition.*, Manuscript Accepted.

**Ratnayake, R.R.**, Kugendren, T., Gnanavelrajah, N. (2014). Changes in soil carbon stocks under different agricultural management practices in North Sri Lanka. *Journal of National Science Foundation*, 42:37-44

Mohanam, K., **Ratnayake, R.R.**, Mathaniga, K., Abayasekara, C.L., Gnanavelrajah, N. (2014). Effect of co-culturing of cellulolytic fungal isolates for degradation of lignocellulosic material, *Journal of Yeast and Fungal Research*, 5: 23-30

**Ratnayake, R.R.**, Seneviratne, G., Kulasooriya, S.A. (2013). Effect of soil carbohydrates on nutrient availability in natural forests and cultivated lands in Sri Lanka. *Eurasian Soil Science*, 46: 579-586.

Gunathilake, K.M.D., **Ratnayake, R.R.**, Kulasooriya, S.A., Karunaratne, D.N. (2013). Evaluation of Cellulose Degrading Efficiency of some fungi and bacteria and their biofilms. *Journal of National Science Foundation*, 41: 155-16.

**Ratnayake, R.R.**, Seneviratne, G., Kulasooriya, S.A. (2011). The Effect of Cultivation on Organic Carbon Content in the Clay Mineral Fraction of Soils. *International Journal of Soil Science*, 6: 217-223.

**Ratnayake, R.R.**, Seneviratne, G., Kulasooriya, S.A., (2008). Prediction of the composition of clay bound organic matter in terms of other soil organic matter fractions. *Current Science*, 95: 763-766.

**Ratnayake, R.R.**, Seneviratne, G., Kulasooriya, S.A., (2007). A modified method of weight loss on ignition to evaluate soil organic matter fractions. *International Journal of Soil Science*, 2:69-73.

## CONFERENCE PROCEEDINGS:

Hossain, M. F., **Ratnayake, R.R.**, Nadarajah, R., Kumara, K. L. W. (2016). Wastewater treatment potential of cyanobacteria isolated from fresh waterbodies of Sri Lanka; 16th conference of the science council of Asia, May 30- June 1, 2016; Colombo: Sri Lanka.

R.P.S.K. Rajapaksha, S.D. Saputhanthri, H.M.S.P. Madawala, S. K. Gunathilake, **R.R. Ratnayake** (2016). Soil C sequestration of forest-cardamom systems in Knuckles Forest Range, Sri Lanka. 16th conference of the science council of Asia, May 30- June 1, 2016; Colombo: Sri Lanka.

**R.R. Ratnayake**, B.M.A.C.A. Perera, R.P.S.K. Rajapaksha, E.M.H.G.S. Ekanayake, R.K.G.K. Kumara, H.M.A.C. Gunaratne (2015). Soil carbon sequestration and nutrient status of tropical rice based cropping systems. 2<sup>nd</sup> International Conference on sustainable agriculture food security : A Comprehensive Approach, 12-13 October 2015, Universitas Padjadjaran, Jatinangor, West Jawa, Indonesia.

**R.R. Ratnayake**, T. Rosanthan, N. Gnanavelrajah (2014). Soil organic carbon fractions, aggregate stability, nutrient availability and their interrelationships in tropical cropping systems. 20<sup>th</sup> World Congress of Soil Science, June 8-13 2014, Jeju, Korea.

M.M.S.N. Premetilake, **R.R. Ratnayake**, S.A. Kulasooriya, G.A.D. Perera (2014). Variation of the soil organic carbon sub pool along a chronosequence of age. 20<sup>th</sup> World Congress of Soil Science, June 8-13 2014, Jeju, Korea.

Premetilake M. M. S. N. , **Ratnayake, R.R.**, Kulasooriya, S.A. and Perera, G.A.D.(2014) soil acidification and its influence on soil organic carbon levels along a chronosequence of *Eucalyptus grandis* plantations in Sri Lanka. Proceedings of the Peradeniya University International Research Sessions, Sri Lanka, Vol. 18.p.583.

Premetilake M. M. S. N. , **Ratnayake, R.R.**, Kulasooriya, S.A. and Perera, G.A.D.(2014) Variation of microbial community along a chronosequence of age in *Eucalyptus grandis* forest plantation and some other land uses in the intermediate zone of Sri Lanka. Proceedings of 1st Ruhuna International Science & Technology Conference, Sri Lanka , P118

Premetilake M. M. S. N., **Ratnayake, R.R.**, Kulasooriya, S.A. and Perera, G.A.D.(2014) Variation of litter nutrients along a chronosequence of age in Eucalyptus grandis plantation forests in Sri Lanka. Proceedings of Post graduate institute of Science. Peradeniya University of Sri Lanka.p.71.

Kathirgamanathan, M., **Ratnayake, R.R.**, Kasinathar, M., Kulasooriya, S.A. and Abayasekara C.L. (2014) Effect of co-culturing of cellulolytic fungal isolates on enzymatic degradation of lignocellulosic material Proceedings of Post graduate institute of Science. Peradeniya University of Sri Lanka.p.96.

**Ratnayake, R.R.**, Perera, B.M.A.C., Rajapaksha, R.P.S.K., Ekanayake, E.M.H.G.S., Gunaratne, H.M.A.C., Kumara, R.K.G.K A. (2014). Soil carbon sequestration and nutrient statuses of rice based farming systems in the dry zone of Sri Lanka. 2<sup>nd</sup> International Symposium on Driving Research towards Economy Opportunities and Challenges. 13<sup>th</sup> – 14<sup>th</sup> November, Kandy, Sri Lanka.

M. Kasinathar, M. Kathirgamanathan, **R.R. Ratnayake**, N. Gnanavelrajah (2013). Biodegradation of kitchen waste for biofuel production. Annual scientific sessions of the Sri Lankan Society for Microbiology (SSM), Post Graduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka. 25<sup>th</sup> October 2013.

**Ratnayake, R.R.**, Kugendran, T., Gnanavelrajah, N. (2012). Assessment of soil Carbon stocks under different agricultural management practices in the tropics. *International Conference on Soil Science and food security*, British Society of Soil Science, University of Nottingham, UK, 4<sup>th</sup>- 5<sup>th</sup> September 2012.

**Ratnayake, R.R.** (2012). Bio-degradation of lignocelluloses for biofuel Production. *The 5th Asian School on Renewable Energy: Advanced Micropower Systems*. National University of Malaysia, Malaysia 9th – 13<sup>th</sup> July 2012,

**Ratnayake, R.R.,** Wasalamuni, D., Gunaratne, T., (2012). Potential of soil carbon sequestration in home gardens of the Central Province. *International conference on Agro Biotechnology for sustainable development*, Colombo, Sri Lanka. 13th March 2012.

**Ratnayake, R.R.,** Wasalamuni, D., Gunaratne, T., (2011). Development of a sustainable home garden system in Sri Lanka to optimize soil C sequestration. In Proceedings of the *International Symposium on Soil Organic Matter: Organic matter dynamics – from soils to oceans*, Leuven, Belgium, 11-14 July 2011.

Kugendran, T., **Ratnayake, R.R.,** Gnanavelrajah, N. (2011). Assessment of soil Carbon stocks in different land uses in Jafna district. **International Conference of the East and Southeast Asia Federation of Soil Science Societies**, Cinnamon Lakeside Hotel, Colombo, Sri Lanka, 10th to 13th October 2011.

Gunathileke, K.M.D., **Ratnayake, R.R.,** Kulasoorya, S.A., Karunaratne, D.N. (2011). Biodegradation of Cellulose for Biofuel Production Using Microbial Biofilms. **International symposium on Natural Products and their Applications in Health and Agriculture**, Institute of Fundamental Studies, Kandy, 3rd – 8th October 2011.

Premetilake, M.M.S.N., **Ratnayake, R.R.,** Kulasoorya, S.A., Perera, G.A.D. (2011) Investigating variation of microbial biomass in plantation forests with age. *Research Symposium 2011*, Uwa Wellassa University of Sri Lanka.

Perera, O.S., **Ratnayake, R.R.**, Kulasoorya, S.A. (2010) Isolation of microflora and changes of carbohydrates certain water weeds through senescence. **Research Symposium 2010**, Uwa Wellassa University of Sri Lanka.

**Ratnayake, R.R.**, Seneviratne, G., Kulasoorya, S.A., (2009). Soil C sequestration in labile organic and stable mineral fractions of natural forests and cultivated lands in Sri Lanka. **In Proceedings of the International Symposium on Organic matter Dynamics: Land use, management and global change, Colorado, USA, 6-9 July 2009.**

**Ratnayake, R.R.**, Seneviratne, G., Kulasoorya, S.A., (2007). Relationship between soil carbohydrates and nutrient availability in natural forests and the adjacent cultivated lands. **In Proceedings of the International Symposium on Organic matter Dynamics in Agro-Ecosystems, Poitiers, France, 16-19 July 2007.**

#### **AWARDS:**

**SUSRED Awards 2013:** Support Scheme for Supervision of Research Degrees by National Science Foundation (NSF)

**Presidential Awards** (Scientific Research 2007, 2008 & 2009)

**Endeavour Research Fellowship (2008)** by the Australian Government to carry out Post Doctoral Research in Australia.

#### **POST GRADUATE SUPERVISION:**

##### **Postgraduate degrees completed**

Bimali Kangaraarchchi, **MSc.**, PGIS, University of Peradeniya, Sri Lanka, 2016

M.M.S.N. Premathileke, **PhD**, PGIS, University of Peradeniya. 2015

K.A.J.M. Kuruppuarachchi, **PhD**, Open University of Sri Lanka, 2011

K.M.D. Gunathilleka, **M.Phil**, PGIS, University of Peradeniya, Sri Lanka, 2012

P.R.R.Weerakoon, **MSc.**, PGIS, University of Peradeniya, Sri Lanka, 2014

**Postgraduate studies continuing**

K. Mohanan, Ph.D., University of Peradeniya, Sri Lanka

MD Fuad Hossain, Ph.D., (Under Presidential Scholarships for Foreign Students)

W.A.D.D. Wasalamuni, M.Phil, University of Peradeniya, Sri Lanka

R.P.S.K. Rajapaksha, M.Phil, University of Peradeniya, Sri Lanka

S. Jayasekara, M.Phil, University of Peradeniya

**RESEARCH GRANTS:**

**NRC No. 12-031**

Rs 5,945,027.00 (59450\$)-National Research Council, Sri Lanka

“Biofuel and other microbial products from cellulosic biomass”

**Government of Sri Lanka Presidential Scholarships for Foreign Students - 2013/14**

PhD student's stipend + Research expenses = Rs. 19, 10,000.00 (20,000\$)

**TRAVEL GRANTS**

By COMSATS, Pakistan to participate in “The 5th Asian School on Renewable Energy: Advanced Micropower Systems” in National University of Malaysia, Malaysia

By Waters, India to participate in “Executive Technology Forum” in Bangalore, India

By National Science Foundation to participate in “ 20<sup>th</sup> World Congress of Soil Science” in Jeju, Korea

**MEMBERSHIPS:**

**Member**, British Society of Soil Science

**Member**, American Association for Women Soil Scientists

**Life member**, Soil Science Society of Sri Lanka.

**Life Member**, Sri Lanka Association for the Advancement of Science.

**Member** of the Alumni Association of Endeavour Fellows

### **REVIEWER/ EDITORIAL**

Reviewer for Agriculture Ecosystem and Environment (Elsevier, Impact factor 3.13)

Reviewer for Plant & Soil (Springer, 2.77)

Reviewer for Agro forestry Journal (Springer)

Reviewer for Catena (Elsevier, Impact factor 2.48)

Reviewer for Asian Journal of Agriculture and Food Sciences

Editor for "Scientia" A magazine of the Institute of Fundamental Studies

### **CURRENT RESEARCH PROJECTS:**

- (1) Biofilm based biofuel production using cellulosic biomass
- (2) Bio diesel production from fresh water cyanobacteria
- (3) Potential of soil carbon sequestration in home garden systems of Sri Lanka
- (4) Assessment of soil C sequestration in forest and agricultural plantations of Sri Lanka.
- (5) Land use and soil C sequestration in North Sri Lanka
- (6) Assessment and mapping of soil C stocks and nutrient status of paddy soils of Sri Lanka
- (7) Assessment and Mapping of Soil C Stocks in Knuckles Forest Region of Sri Lanka.

### **EMPLOYMENT:**

**March 2008- March 2009**, Visiting Research Fellow, School of Environmental Science, Murdoch University, Australia

**August 2007- December 2007**, Visiting Research Fellow, World Forestry Center, Oregon, USA

**2001- August 2007**, Research Assistant, Biological Nitrogen Fixation Project, Institute Of Fundamental Studies, Sri Lanka

**1998-2000**, Lecturer in Botany, Department of Biological Sciences, Faculty of Applied Sciences, Rajarata University of Sri Lanka.



**1997-1998**, Research Assistant, Department of Botany, University of Peradeniya, Sri Lanka.

**1992-1997**, Research Assistant, Biological Nitrogen Fixation Project, Institute of Fundamental Studies, Sri Lanka.

#### **PERSONAL DATA:**

- Name : Renuka R. Ratnayake
- Marital Status : Married
- Address (Residence) : No. 354, Kandy Road, Ampitiya, Sri Lanka
- Date of birth : 1964.09.30
- Nationality : Sri Lankan
- National ID : 647741851V

#### **REFERENCES:**

**Professor S.H.P.P. Karunaratne**, Director, National Institute of Fundamental Studies, Kandy, Sri Lanka. E mail: [dirifs@yahoo.com](mailto:dirifs@yahoo.com) Tel : 94-8-12232002, Fax : 94-8-12232131

**Professor Richard W. Bell**, Professor in Sustainable Land Management, Faculty of Sustainability, Environment and Life Sciences, School of Environmental Science, Murdoch University, South St, Murdoch, Australia WA 6150

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Renuka R. Ratnayake

03.06.2016