

CURRICULUM VITAE

PERSONAL:

Name: Gamini Seneviratne
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 Hantana Road, Kandy, Sri Lanka.
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 Employment: Senior Research Professor
 Nationality: Sri Lankan
 Date of Birth: 11 May 1962
 Sex: Male
 Civil status: Married

EDUCATION:

1986-1993: **University of Peradeniya, Sri Lanka.** Department of Botany. Doctor of Philosophy (Ph. D.) in Botany, November 1993.
Thesis title: Optimization the productivity of sustainable traditional rice farming in the dry zone of Sri Lanka.
 1981-1984: **University of Peradeniya,** Faculty of Science. Bachelor of Science, (B. Sc.) December 1984. Subjects: Botany, Chemistry and Zoology.

EXPERIENCE:

December 2015 **Senior Research Professor**

- To date National Institute of Fundamental Studies, Hantana Road, Kandy, Sri Lanka.
 Current research interests are to extend microbial biofilm biotechnology to other crops in agriculture and plantations as biofertilizers, and also to biochemicals production for various applications.

May 2009-**Research Professor**

December 2015 National Institute of Fundamental Studies, Hantana Road, Kandy, Sri Lanka.
 Research interests are N₂O emissions and soil carbon sequestration in tropical ecosystems, and development of biofilms for plant growth improvement and, medical and environmental applications. Supervised and guided undergraduate and postgraduate students working in research projects on Biological Nitrogen Fixation and soil carbon sequestration in ecosystems.

January 2001 **Senior Research Fellow**

-May 2009 Conducted research on mitigation of N₂O emissions in tropical ecosystems and its implications in the global N₂O budgets, soil carbon and nutrient dynamics as predicted by artificial neural networks, soil carbon sequestration, and rhizobial biofilms and their importance in plant-microbe interactions. Over ten years of post-doctoral research experiences. Supervised and guided undergraduate and postgraduate students working in research projects on Biological Nitrogen Fixation and soil carbon and nutrient dynamics in ecosystems.

January 1993-2001 **Research Fellow**

Supervised and guided local as well as foreign undergraduate and postgraduate students working in research projects on Biological Nitrogen Fixation and soil fertility. Coordinated a Belgian-Sri Lankan project on Biological Nitrogen Fixation.

Participated in several seminars/workshops organized by joint FAO/IAEA division on nuclear related methods in soil/plant aspects on sustainable agriculture. Presented a paper at the Open Science Conference of the IGBP, held in July 2001 in Amsterdam. Conducted studies on greenhouse gas emissions from agroecosystems in a post-doctoral fellowship in Belgium.

1991-1992: **Research Assistant/Assistant Lecturer**

Department of Botany, University of Peradeniya, Sri Lanka.
Developed and conducted a course on Biometry/Statistics.

1985-1990: **Postgraduate Research Assistant**

Trained on ^{15}N isotopic techniques under field conditions and methods used in soil/plant analyses. Conducted designed field experiments under control conditions as well as on-farm trials in farmers' fields, on fallow vegetational succession, nitrogen cycling, soil organic matter and phosphorus dynamics in different rice farming systems. Assessed N_2 fixation and N cycling by legume green manure (*Sesbania* species) in the conservation rice farming system using ^{15}N methods. This was funded by SAREC, Sweden.

1985: **Research Assistant**

Field experimentation with *Azolla* on N_2 fixation and N transfer to rice using ^{15}N isotopic techniques. This was coordinated and funded by joint FAO/IAEA division.

**PROFESSIONAL
ACTIVITIES:**

Fellow, National Academy of Sciences of Sri Lanka
Associate Editor, Agriculture, Ecosystems & Environment (Elsevier; SCI journal with Impact factor of 4.099, first in the category "Agriculture multidisciplinary" in some years).
Former Editorial Board member, Ceylon Journal of Science (Biological Sciences), University of Peradeniya, Sri Lanka.
Member, Soil Science Society of America/American Society of Agronomy.
Member, American Society for Microbiology.
Life Member, Sri Lanka Association for the Advancement of Science (SLAAS).
Member, Institute of Biology, Sri Lanka.

REVIEWER (JOURNALS & GRANTS): Soil Biology & Biochemistry; Agriculture, Ecosystems & Environment; Hydrobiologia; Ecological Research; Soil Science Society of America Journal; Agronomy Journal; Journal of Environmental Quality (JEQ); Australian Journal of Agricultural Research; Nature (London) – Open reviewer; European Journal of Soil Biology; Bioresource Technology. Antonie van Leeuwenhoek International Journal of General and Molecular Microbiology; Agroforestry Systems. Local journals [Journal of the National Science Foundation of Sri Lanka; Journal of Soil Science Society of Sri Lanka; Annals of the Sri Lanka Department of Agriculture (ASDA)]. Two major local granting bodies (National Science Foundation (NSF); Council for Agricultural Research Policy (CARP)].

AWARDS & CREDENTIALS:

- 1) Presidential Research Awards in 1999, 2000 and 2001-2006. First in the country in this award scheme in 2000. **Google Scholar h-index = 21.**
- 2) Listed as a top researcher in Sri Lanka by the University Grant Commission (UGC).
- 3) According to the data of a report of the National Research Council (NRC), Sri Lanka, 2nd most productive scientist in the country in 2002 and 2003. Further, 5th most productive scientist out of about 1,800 scientists listed in the report for the period 1991-2006.
- 4) Listed as one of the most productive scientists in Sri Lanka in the Third World Academy of Sciences, Italy.

- 5) Short-term Visiting Collaborative Research Fellow at the University of Sydney, Australia (April-June 2007). Only successful applicant from the Asian region in this fellowship in the year.
- 6) Visiting Professor of the University of Sydney, Australia from January-May 2009, funded by AusAID, Canberra.

PUBLICATIONS:

- 1) Kulasooriya, S.A., Seneviratne, G., Ekanayake, E.M.H.G.S. (2017) Soil microbial diversity and its utilization in agriculture in Sri Lanka. In: J.K. Patra et al. (eds.), *Microbial Biotechnology*, Springer Nature, Singapore, pp. 203-244.
- 2) Seneviratne, G., Wijepala, P.C., Chandrasiri, K.P.N.K. (2017) Developed biofilm-based microbial ameliorators for remediating degraded agroecosystems and the environment. In: I. Ahmad, F. M. Husain (eds.), *Biofilms in Plant and Soil Health*, John Wiley & Sons Ltd., Chichester, United Kingdom, pp. 327-335.
- 3) Perera, T.A., Tirimanne, T.L.S., Seneviratne, G., Kulasooriya, S.A. (2017) *Azorhizobium caulinodans* ORS 571–*Aspergillus* spp. biofilm in the presence of flavonoid naringenin: An extremely effective association for rice root colonization with a definite future as a nitrogen biofertilizer. *Indian Journal of Biochemistry and Biophysics* 54, 214-222.
- 4) Herath, L., Seneviratne, G., Jayasinghe, J.A.W.W., Senanayake, D.M.N. (2017) Microbial biofilms and mitigation of loss of agro-biodiversity in degraded soils. *Journal of National Science Foundation of Sri Lanka* 45, 329 – 335.
- 5) Seneviratne, G., Wijepala, P.C. (2017) Biofilm biofertilizers for incorporating biodiversity benefits and reducing environmentally harmful subsidies in agriculture. *The Sri Lanka Forester* 38, 59 – 63.
- 6) Singh, J.S., Seneviratne, G. (2017) *Agro-Environmental Sustainability, Vol. 1: Managing Crop Health*. Springer Nature, Switzerland. 316 pp.
- 7) Singh, J.S., Seneviratne, G. (2017) *Agro-Environmental Sustainability, Vol. 2: Managing Environmental Pollution*. Springer Nature, Switzerland. 257 pp.
- 8) Seneviratne, G., Weerasekara, M.L.M.A.W., Kumaresan, D., Zavahir, J.S. (2017) Microbial signaling in plant-microbe interactions and its role on sustainability of agroecosystems. In: J. Singh, G. Seneviratne (eds), *Agro-Environmental Sustainability. Vol. 1: Managing Crop Health*. Springer Nature, Switzerland, pp. 1-17.
- 9) Seneviratne, M., Seneviratne, G., Madawala, H., Vithanage, M. (2017) Role of rhizospheric microbes in heavy metal uptake by plants. In: J. Singh, G. Seneviratne (eds), *Agro-Environmental Sustainability, Vol. 2: Managing Environmental Pollution*. Springer Nature, Switzerland, pp. 147-163.
- 10) Buddhika, U.V.A., Seneviratne, G., Ekanayake, E.M.H.G.S., Senanayake, D.M.N., Igalavithane, A.D., Weeraratne, N., Jayasekara, A.P.D.A., Weerakoon, W.L., Indrajith, A., Gunaratne, H.M.A.C., Kumara, R.K.G.K., De Silva, M.S.D.L., Kennedy, I.R. (2016) Biofilmed biofertilizers application in agroecosystems. In: V.K. Gupta, D. Thangdurai, G. D. Sharma (eds.), *Microbial Bioresources*, CAB International, Wallingford, United Kingdom, pp. 96-106.
- 11) Hettiarachchi, R.P., Dharmakeerthi, R.S., Seneviratne, G., Jayakody, A.N., De Silva, K.E., Gunathilake, T., Thewarapperuma, A. (2016) Determination of desirable properties of bacteria, fungi and their biofilm associated with rubber rhizosphere. *Tropical Agricultural Research* 27, 399– 413.
- 12) Seneviratne, M., Gunaratne, S., Bandara, T., Weerasundara, L., Rajakaruna, N., Seneviratne, G., Vithanage, M. (2016) Plant growth promotion by *Bradyrhizobium japonicum* under heavy metal stress. *South African Journal of Botany* 105, 19–24.
- 13) Henagamage, A.P., Seneviratne, G., Abayasekera, C., Kodikara, K.M.S. (2016) Screening for crop response to diazotrophic bacteria isolated from Potato rhizosphere. *Ceylon Journal of Science* 45, 55-63.
- 14) Kurupparachchi, K. A. J. M., Seneviratne, G., Madurapperuma, B.D. (2016) Carbon sequestration in tropical forest stands: its control by plant, soil and climatic factors. *Open Journal of Forestry* 6, 59-71.
- 15) Seneviratne, M., Madawala, H.M.S.P., Seneviratne, G. Vithanage, M. (2016) Cellular level defensive mechanisms in plants against toxic metals. In: J. A. Daniels (ed.), *Advances in Environmental Research. Volume 46*. NOVA publishers, USA, pp. 41-55.
- 16) Bandara, T., Herath, L., Kumarathilaka, P., Seneviratne, M., Seneviratne, G., Rajakaruna, N., Vithanage, M., Ok, Y. (2015) Role of woody biochar and fungal-bacterial co-inoculation on enzyme activity and metal immobilization in serpentine soil. *Journal of Soil and Sediments* 15: 1-9.

- 17) Seneviratne, M., Vithanage, M., Madawala, H.M.S.P., Seneviratne, G. (2015) A novel microbial biofilm for bioremoval of Ni from aqueous media. *Bioremediation Journal* 19: 239-248.
- 18) Seneviratne, G. (2015) Signal transduction in edaphic ecosystems governs sustainability. *Agriculture, Ecosystems and Environment* 210: 47–49.
- 19) Seneviratne, M., Seneviratne, G., Madawala, H.M.S.P., Iqbal, M.C.M., Rajakaruna, N., Bandara, T., Vithanage, M. (2015) A preliminary study of the role of bacterial–fungal co-inoculation on heavy metal phytotoxicity in serpentine soil. *Australian Journal of Botany* 63: 261–268.
- 20) Buddhika, U. V. A. and Seneviratne, G. (2015) Biofilmedbiofertilizers: a recent trend in biofertilizer application. In: Sinha, S., Pant, K.K., Bajpai, S. and Govil, J.N. (eds.) *Fertilizer Technology II: Biofertilizers*. Studium Press LLC, Houston, Texas, USA, pp. 69-80.
- 21) Herath, H.M.L.I., Menikdiwela, K.R., Igalavithana, A.D., Seneviratne, G. (2015) Developed fungal-bacterial biofilms having nitrogen fixers: universal biofertilizers for legumes and non-Legumes. In: F. J. de Bruijn (Ed.), *Biological Nitrogen Fixation*, Volume 2, First Edition. John Wiley & Sons, Inc., Hoboken, NJ, USA, pp. 1041-1046.
- 22) Kuruppuarachchi, K. A. J. M., Seneviratne, G. (2014 & 2015) Microbial biofilms developed from isolates of native tree species for reforestation: A pilot study at nursery stage. *The Sri Lanka Forester* 36&37, 49-58.
- 23) Herath, H.M.L.I., Rajapaksha, A.U., Vithanage, M. and Seneviratne, G. (2014) Developed fungal-bacterial biofilms as a novel tool for bioremoval of hexavalent chromium from wastewater. *Chemistry and Ecology* 30: 418-427.
- 24) De Silva, M.S.D.L., Jayasekera, A.P.D.A., Seneviratne, G., Abeysekera, U.P., Premathunge, E.W.T.P. and Wijesekera, S.N. (2014) Soil fertility improvement through biofilmedbiofertilizers: potential for field applications in tea cultivation. *Sri Lanka Journal of Tea Science* 79: 46-61.
- 25) Hettiarachchi, R.P., Dharmakeerthi, R.S., Seneviratne, G., Jayakody, A.N., de Silva, E., Gunathilake, T., Thewarapperuma, A., Maheepala, C.K. (2014) Availability and leaching of nutrients after biofilm biofertilizer applications into a Red Yellow Podsollic soil. *Journal of Rubber Research Institute of Sri Lanka* 94: 43-53.
- 26) Buddhika, U.V.A.; Seneviratne, G.; Abayasekara, C.L. (2014) Fungal-bacterial biofilms differ from bacterial monocultures in seed germination and Indole acetic acid production. *Int. J. Sci. Res. Pub.* 4: 1-5.
- 27) Hettiarachchi, R.P., Dharmakeerthi, R.S., Jayakody, A.N., Seneviratne, G., de Silva, E., Gunathilake, T., Thewarapperuma, A. (2014) Effectiveness of fungal bacterial interactions as biofilmedbiofertilizers on enhancement of root growth of *Hevea* seedlings. *J. Environ. Prof. Sri Lanka* 3: 25-40.
- 28) Seneviratne G., Weeraratne N., Buddhika U.V.A. (2013) Diversity of plant root associated microbes: its regulation by introduced biofilms. In: *Plant Microbe Symbiosis-Fundamentals and Advances*. N.K. Arora (ed.), Springer, India, pp. 351-372. Invited.
- 29) Herath, H.M.L.I., Senanayake, D.M.N., Seneviratne, G., Bandara, DC. (2013). Variation of biochemical expressions of developed fungal-bacterial biofilms over their monocultures and its effect on plant growth. *Tropical Agricultural Research* 24: 186 – 192.
- 30) Kuruppuarachchi, K. A. J. M., Seneviratne, G., Madurapperuma, B.D. (2013) Drought induced fine root growth and canopy green-up of tropical dry zone vegetations in Sri Lanka. *Journal of Tropical Forestry and Environment* 3: 17-23.
- 31) Kuruppuarachchi, K. A. J. M., Seneviratne, G. (2013) Predicting aboveground biomass increment of tropical forests from litter-fall. *Ceylon Journal of Science (Biological Science)* 42(1): 35-40.
- 32) Buddhika U.V.A., Athauda A.R.W.P.K., Kulasooriya S.A., Seneviratne G., Abayasekara C.L. (2013) Emergence of diverse microbes on application of biofilmedbiofertilizers to a maize growing soil. *Ceylon Journal of Science (Biological Science)* 42 (2): 39-47.
- 33) 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.
- 34) Seneviratne, G. and Kulasooriya, S.A. (2013). Reinstating soil microbial diversity in agroecosystems: The need of the hour for sustainability and health. *Agriculture, Ecosystems & Environment* 164: 181-182.
- 35) Seneviratne, G., Igalavithane, A.D., Sandamali, H.A.J., Henakaarachchi, M.P.N.K. and Jayakody, A.N. (2012). Fungal inoculation with clay improves carbon stabilization of tropical forest floor litter. *Environmental Research Journal* 6: 287-293.

- 36) Seneviratne, G. (2012) Are we wrong in conventional approach of biocontrol? *Current Science* 103: 1387-1388.
- 37) Seneviratne, G., Jayasekara, A. P. D. A., De Silva, M.S.D.L. and Abeysekera, U. P. (2011) Developed microbial biofilms can restore deteriorated conventional agricultural soils. *Soil Biology and Biochemistry* 43: 1059-1062.
- 38) Ratnayake, R. R., Seneviratne, G. and Kulasoorya, S. A. (2011) Effects of land use and management practices on quantitative changes of soil carbohydrates. *Journal of National Science Foundation of Sri Lanka* 39: 345-353.
- 39) Ratnayake, R. R., Seneviratne, G. and Kulasoorya, 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.
- 40) Seneviratne, G., Jayakody, K. P. K., Weerasekara, M. L. M. A. W., Someya, T. and Ryuda, N. (2011) Microbial biofertilizer application versus compost use in agriculture: soil health implications. In: Miransari, M. (ed.) *Soil Microbes and Environmental Health*. Nova Science Publishers Inc., USA, pp. 81-117. Invited.
- 41) Seneviratne, G., Weerasekara, M. L. M. A. W. and Jayakody, K. P. K. (2011) Soil tillage effects on N₂ fixing bacteria and their communities. In: Miransari, M. (ed.) *Soil Tillage and Microbial Activities*. Research Signpost, India, pp. 1-18. Invited.
- 42) Weerasinghe, S. M., Chandrasekara, C., Seneviratne, G., Gunatilleke, C. V. S. and Gunatilleke, I. A. U. N. (2010) Growth variations of edaphic specialist species in a reciprocal pot experiment in Sri Lanka. *Journal of National Science Foundation of Sri Lanka* 38: 171-179.
- 43) Seneviratne, G., Weerasekara, M. L. M. A. W. and Zavahir, J. S. (2010) Microbial Biofilms: How Effective in *Rhizobium*-Legume Symbiosis? In: Khan, M. S., Zaidi, A. and Musarrat, J. (eds.) *Microbes for Legume Improvement*. Springer-Verlag/Wien, pp. 123-136. Invited.
- 44) Seneviratne, G., Weerasekara, M. L. M. A. W., Seneviratne, K.A.C.N., Zavahir, J. S., Kecskés, M.L. and Kennedy, I.R. (2010) Importance of biofilm formation in plant growth promoting rhizobacterial action. In: Maheshwari, D. K. (ed.) *Plant Growth and Health Promoting Bacteria*, *Microbiology Monographs* 18 (Springer series), Springer-Verlag Berlin Heidelberg, pp. 81-96. Invited.
- 45) Seneviratne, G., Thilakarathne, R.M.M.S., Jayasekara, A.P.D.A., Seneviratne, K. A. C. N., Padmathilake, K. R. E. and De Silva, M.S.D.L. (2009) Developing beneficial microbial biofilms on roots of non-legumes: A novel biofertilizing technique. In: Khan, M. S., Zaidi, A. and Musarrat, J. (eds.) *Microbial Strategies for Crop Improvement*. Springer-Verlag, Germany, pp. 51-62. Invited.
- 46) Seneviratne, G. (2009) Collapse of beneficial microbial communities and deterioration of soil health: a cause for reduced crop productivity. *Current Science* 96: 633.
- 47) Seneviratne, G. (2009) Effect of forest drought on global warming is enigmatic. *Current Science* 97: 9.
- 48) Seneviratne, G., Peyvast G. A., Olfati, J. A. and Kariminia, A. (2009) Rhizobia as biofertilizers for mushroom cultivation. *Current Science* 96: 1559.
- 49) Seneviratne, G., Henakaarchchi, M.P.N.K., Weerasekara, M.L.M.A.W. and Nandasena, K. A. (2009) Soil organic carbon and nitrogen pools as influenced by polyphenols in different particle size fractions under tropical conditions. *Journal of National Science Foundation of Sri Lanka* 37: 67-70.
- 50) Ambagahaduwa, I. M., Prasad, N., Gunatilleke, I.A.U.N., Seneviratne, G. and Gunatilleke, C. V. S. (2009) Estimation of above ground biomass of a *Pinus caribaea* Morelet stand in lower Hantana. *Journal of National Science Foundation of Sri Lanka* 37: 195-201.
- 51) Ratnayake, R. R., Seneviratne, G. and Kulasoorya, S. A. (2008) Characterization of clay bound organic matter using activation energy calculated by weight loss on ignition method. *Current Science* 95: 763-766.
- 52) Seneviratne, G. (2008) Biological nitrogen fixation: Potential biotechnological applications beyond biofertilizers. *Current Science* 95: 7.
- 53) Seneviratne, G. (2008) Two-thirds law of nitrogen mineralization under undisturbed soil conditions: a new theory. *Pedosphere* 18: 149-153.
- 54) Seneviratne, G., Zavahir, J. S., Bandara, W. M. M. S. and Weerasekara, M. L. M. A. W. (2008) Fungal-bacterial biofilms: their development for novel biotechnological applications. *World Journal of Microbiology and Biotechnology* 24: 739-743.
- 55) Siddique, I., Gutjahr, C., Seneviratne, G., Breckling, B., Ranwala, S. W. and Alexander, I. J. (2007) Changes in soil chemistry associated with the establishment of forest gardens on eroded, acidified grassland soils in Sri Lanka. *Biology and Fertility of Soils* 44: 163-170.

- 56) Zavahir, J. S. and Seneviratne, G. (2007) Potential of developed microbial biofilms in generating novel bioactive compounds. *Research Journal of Microbiology* 2: 397-401.
- 57) Ratnayake, R. R., Seneviratne, G. and 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.
- 58) Bandara, W. M. M. S., Seneviratne, G. and Kulasooriya, S. A. (2006) Interactions among endophytic bacteria and fungi: effects and potentials. *Journal of Biosciences* 31: 645-650.
- 59) Seneviratne, G. and Indrasena, I. K. (2006) Nitrogen fixation in lichens is important for improved rock weathering. *Journal of Biosciences* 31: 639-643.
- 60) Jayasinghearachchi, H. S. and Seneviratne, G. (2006) Fungal solubilization of rock phosphate is enhanced by forming fungal-rhizobial biofilms. *Soil Biology and Biochemistry* 38: 405-408.
- 61) Jayasinghearachchi, H. S., Seneviratne, G. and Weerasinghe, H. M. S. P. M. (2006) Tannin interactions with legume-rhizobial N₂ fixing symbiosis. *International Journal of Agricultural Research* 1: 1-7.
- 62) Jayasinghearachchi, H. S. and Seneviratne, G. (2006) A mushroom-fungus helps improve endophytic colonization of tomato by *Pseudomonas fluorescens* through biofilm formation. *Research Journal of Microbiology* 1: 83-89.
- 63) Seneviratne, G., Tennakoon, N. S., Weerasekara, M. L. M. A. W. and Nandasena, K. A. (2006) Polyethylene biodegradation by a developed *Penicillium-Bacillus* biofilm. *Current Science* 90: 20-21.
- 64) Seneviratne, G., Kurupparachchi, K. A. J. M., Somaratne, S. and Seneviratne, K. A. C. N. (2006) Nutrient cycling and safety-net mechanism in the tropical homegardens. *International Journal of Agricultural Research* 1: 169-182.
- 65) Jayasinghearachchi, H. S., Seneviratne, G. and Weerasinghe, H. M. S. P. M. (2006) A polyacrylamide gel electrophoretic approach of fingerprinting soil polyphenols. *International Journal of Soil Sciences* 1: 53-57.
- 66) Chandrasekara, C. M. C. P., Weerasinghe, H. M. S. P. M., Gunatilleke, I. A. U. N. and Seneviratne, G. (2005) Spatial distribution of arbuscular mycorrhizas along an elevation and edaphic gradient in the forest dynamics plot at Sinharaja, Sri Lanka. *Ceylon Journal of Science (Biological Science)* 34: 47-64.
- 67) Somaratne, S., Seneviratne, G. and Coomaraswamy, U. (2005) Prediction of soil organic carbon across different land-use patterns: A neural network approach. *Soil Science Society of America Journal* 69: 1580-1589.
- 68) Seneviratne, G. and Jayasinghearachchi, H. S. (2005) A rhizobial biofilm with nitrogenase activity alters nutrient availability in a soil. *Soil Biology and Biochemistry* 37: 1975-1978.
- 69) Tennakoon, M. M. D., Gunatilleke, I. A. U. N., Hafeel, K. M., Seneviratne, G., Gunatilleke, C. V. S. and Ashton, P. M. S. (2005) Ectomycorrhizal colonization and seedling growth of *Shorea* (Dipterocarpaceae) species in simulated shadeenvironments of a Sri Lankan rain forest. *Forest Ecology and Management* 208: 399-405.
- 70) Jayasinghearachchi, H. S. and Seneviratne, G. (2004) Can mushrooms fix atmospheric nitrogen? *Journal of Biosciences* 29: 293-296.
- 71) Jayasinghearachchi, H. S. and Seneviratne, G. (2004) A bradyrhizobial-*Penicillium* spp. biofilm with nitrogenase activity improves N₂ fixing symbiosis of soybean. *Biology and Fertility of Soils* 40: 432-434.
- 72) Seneviratne, G. and Nanayakkara, A. (2004) Isotope/element fractionation during surface adsorption. *American Journal of Physics* 72: 73-75.
- 73) Seneviratne, G. (2003) Development of eco-friendly, beneficial microbial biofilms. *Current Science* 85: 1395-1396.
- 74) Seneviratne, G. (2003) Global warming and terrestrial carbon sequestration. *Journal of Biosciences* 28: 653-655.
- 75) Seneviratne, G. and Somapala, K.L.A. (2003) Litter controls on soil nitrous oxide emission. *Current Science* 84: 498-499.
- 76) Seneviratne, G. and Jayasinghearachchi, H.S. (2003) Mycelial colonization by bradyrhizobia and azorhizobia. *Journal of Biosciences* 28: 243-247.
- 77) Seneviratne, G. and Jayasinghearachchi, H.S. (2003) Phenolic acids: Possible agents of modifying N₂-fixing symbiosis through rhizobial alteration? *Plant and Soil* 252: 385-395.
- 78) Seneviratne, G. (2002) Planting trees for C sequestration: A reality? *Current Science* 82: 777.

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- 80) Seneviratne, G. and Ekanayake, E.M.H.G.S. (2001). A simple method of producing green manure *Sesbaniastrata* to achieve N synchrony in lowland rice. *International Rice Research Notes* 26: 34-35.
- 81) Seneviratne, G. (2001). Mitigating nitrous oxide emission in tropical agriculture: Myths and realities. *Current Science* 80: 117-118.
- 82) Seneviratne, G., Van Holm, L.H.J. and Ekanayake, E.M.H.G.S. (2000). Agronomic benefits of rhizobial inoculant use over nitrogen fertilizer application in tropical soybean. *Field Crops Research* 68: 199-203.
- 83) Seneviratne, G. (2000). Litter nitrogen release in tropical agroecosystems. *Current Science* 79: 1054.
- 84) Seneviratne, G. (2000). Litter quality and nitrogen release in tropical agriculture: a synthesis. *Biology and Fertility of Soils* 31: 60-64.
- 85) Seneviratne, G., Van Holm, L.H.J. and Ekanayake, E.M.H.G.S. (1999). Effect of peat and coir dust-based rhizobial inoculants on the nodulation, plant growth and yield of Soybean (*Glycine max* [L.] Merrill) cv PB 1. *Tropical Agricultural Research and Extension* 2: 132-134.
- 86) Seneviratne, G., (1999). A cheap way to control N₂O in agriculture. *Ambio* 28: 378.
- 87) Seneviratne, G., Van Holm, L.H.J., Balachandra, L.J.A. and Kulasoorya, S.A., (1999). Differential effects of soil properties on leaf nitrogen release. *Biology and Fertility of Soils* 28: 238-243.
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SOME CONTRIBUTIONS TO THE NATIONAL DEVELOPMENT

- 1) Pioneered in a team in producing a local, beneficial bacterial fertilizer for soybean and green gram in Sri Lanka, for replacing urea. This bacterium was introduced to Sri Lanka. At present, this fertilizer is being sold and used for up to about 10,000 acres in the dry zone. Similar fertilizers based on biofilms have been developed at the NIFS for rice, tea, maize, vegetables etc. in order to partially replace the use of urea and other chemical fertilizers (by up to 50%), and they have now been commercialized (please see, www.biofilm.lk). If we could cut down the use of urea by about 50% by using those microbial fertilizers, we would be able to save over 10,000 million rupees of foreign exchange, annually.
- 2) Introduced Fungal-bacterial Biofilm Biotechnology to the world. This technology can be used for enhanced efficiency of the conventional microbial biotechnologies, for example, improved solubilization of Eppawala rock phosphate, improved degradation of polythene, drug discovery, biofuel production etc. Microbial formulations for those are being developed at the NIFS at present.
- 3) Collected an extensive dataset of soil stable carbon in Sri Lanka. This is important for soil carbon banking, which has environmental implications in carbon sequestration and trading.
- 4) Trained over 100 students for advanced research as well as post graduate degrees. So far, I have produced 4 M. Sc., 3 M. Phil. and 8 Ph. D.
- 5) Represented Sri Lanka in international research journals and scientific societies.

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