

Geeshani Maduwanthi Somaratne



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Department of Food Science & Technology, Faculty of Agriculture, University of Peradeniya, Sri Lanka



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Personal Profile

I am a self-motivated, dedicated, and passionate lecturer with well-developed project management and strong analytical skills combined with a flexible attitude to work, proactive and creative researcher, achieved strong team-player skills through work in professional research and academic field of food science and human nutrition.

Professional Qualifications

Lecturer, (2019 -to-date) Department of Food Science & Technology, Faculty of Agriculture, University of Peradeniya, Sri Lanka

Qualified Nutritionist (2016-to-date) (Certificate of registration awarded by the Ceylon Medical Council, Sri Lanka, **SLMC Reg. No 139**)

PhD Scholar, Riddet Institute, Massey University, New Zealand (2016-2020)

Temporary Lecturer (2013 - 2014) *Department of Food Science & Technology, Faculty of Agriculture, University of Peradeniya, Sri Lanka*

Academic Qualifications

PhD (2016 - 2020) from the Riddet Institute, Massey University, Private Bag 11 222, Palmerston North, 4442, New Zealand

MSc in Food and Nutrition (2014 – 2016), Postgraduate Institute of Agriculture, University of Peradeniya, Sri Lanka (FGPA: **3.87/4.00**)

BSc (First Class Honours) in Food Science and Technology (2009 – 2013), Department of Food Science & Technology, Faculty of Agriculture, University of Peradeniya, Sri Lanka (FGPA: **3.91/4.00**)

High school education – G.C.E. A/Levels, Mahamaya Girls' College, Kandy, Sri Lanka

High school, primary school, and Kindergarten education – G.C.E. O/Levels, Hillwood College, Kandv. Sri Lanka

Awards, Scholarships & Prizes

- **Annual Research Excellence Award 2020**, Faculty of Agriculture, University of Peradeniya (Probationary Lecture Category)
- **Annual Research Excellence Award 2019**, Faculty of Agriculture, University of Peradeniya (Probationary Lecture Category)
- **Riddet Institute Student Travel Awards** to attend the 8th International Symposium on "Delivery of Functionality in Complex Food Systems", Porto, Portugal from 7th to 10th July 2019
- **Riddet Institute Overseas Placement Award** to undertake research related to the PhD studies at the INRA (Institut National de la Recherche Agronomique) UMR1253 Dairy and Egg Science and Technology, France with Pr. Françoise Nau, Dr. Juliane Floury and Dr. Didier Dupont
- **Riddet Institute Student Travel Awards** to attend the 19th IUFoST World Food Congress Food Science & Technology 2018, Mumbai, India
- **Riddet Institute CoRE PhD Full Scholarship** to undertake PhD research at the Riddet Institute, Massey University, New Zealand from 2016 - 2019.
- **President's Awards for Scientific Research-2019** for the paper titled as "Effect of polishing on glycemic index and antioxidant properties of red and white basmati rice" at the Ceremony of President's Awards for Scientific Research-2019 organized by the National Research Council, Sri Lanka on 26th August 2019 at Taj Samudra, Colombo.
- **Professor Upali Samarajewa Gold Medal** for the best performance in the BSc Food Science and Technology Degree
- **Keells Gold Medal** for Food Safety in the BSc Food Science and Technology Degree
- **Fonterra Brands Gold Medal for Food Science and Nutrition** in the BSc Food Science and Technology Degree
- **University Scholarships for Academic Excellence** at the final Examination
- **Academic Staff Prize** for the best performance of second year examination – 2010/11
- **Best final year student research presentation (First place)** at the first annual research sessions, Department of Food Science & Technology, Faculty of Agriculture, University of Peradeniya, Sri Lanka – 20th December 2013

Full Paper Publications

Nadeeshani, H., Senevirathne, N., **Somaratne, G.** and Bandara N. (2022). Recent trends in the utilization of pulse protein in food and industrial applications. *ACS Food Science & Technology* 2 (5), 722-737.

Somaratne, G. M. and Pathirana, R. (2021). Potential antiviral herbal drugs from Sri Lanka with special reference to SARS-CoV-2. COVID 19: Impact, Mitigation, Opportunities and Building Resilience "From Adversity to Serendipity", Perspectives of global relevance based on research, experience, and successes in combating COVID-19 in Sri Lanka. Volume 1, pp 100-142.

Somaratne, G., Nau, F., Ferrua, M. J., Singh, J., Ye, A., Dupont, D., Singh, R. P. and Flourey, J. (2020). Characterization of egg white gel microstructure and its relationship with pepsin diffusivity. *Food Hydrocolloids*, 98, 105228.

Somaratne, G., Nau, F., Ferrua, M. J., Singh, J., Ye, A., Dupont, D., Singh, R. P. and Flourey, J. (2020). *In situ* disintegration of egg white gels by pepsin and kinetics of nutrient release followed by time-lapse confocal microscopy. *Food Hydrocolloids*, 98, 105228.

Somaratne, G., Ferrua, M. J., Ye, A., Nau, F., Flourey, J., Dupont, D. and Singh, J. (2020). Food material properties as determining factors in nutrient release during human gastric digestion: A Review. *Critical Reviews in Food Science and Nutrition*, 1-17.

Somaratne, G., Ye, A., Nau, F., Ferrua, M.J., Dupont, D., Singh, R.P. and Singh, J. (2020). Role of biochemical and mechanical disintegration on β -carotene release from steamed and fried sweet potatoes during *in vitro* gastric digestion. *Food Research International* 136, 109481.

Somaratne, G., Ye, A., Nau, F., Ferrua, M.J., Dupont, D., Singh, R.P. and Singh, J. (2020). Egg white gel structure determines biochemical digestion with consequences on softening and mechanical disintegration during *in vitro* gastric digestion. *Food Research International* 138, 109782.

Somaratne, G., Reis, M. M., Ferrua, M. J., Ye, A., Nau, F., Flourey, J., Dupont, D., Singh, R. P. and Singh, J. (2019). Mapping the spatiotemporal distribution of acid and moisture in food structures during gastric juice diffusion using Hyperspectral Imaging. *Journal of Agricultural and Food Chemistry*, 67 (33), 9399-9410.

Somaratne, G.M., Prasantha, B.D.R., Dunuwila, G.R., Chandrasekara, A., Wijesinghe, D. G. N. G. and Gunasekara D. C. S. (2017). Effect of polishing on glycemic index and antioxidant properties of red and white basmati rice. *Food Chemistry* 237, 716-723.

Fernando, W., **Somaratne, G.**, Goozee, K. G., Williams, S., Singh, H. and Martins, R.N. (2017). Diabetes and Alzheimer's disease: can tea phytochemicals play a role in prevention? *Journal of Alzheimer's Disease*, 59 (2), 481-501.

Somaratne, G., (2016). Industrial applications of collagen and their potential role in the prevention of chronic diseases – Critical review. *International Journal of Nutrition and Dietetics*. 3 (2). 55-74.

International Conference Proceedings

H.H.A.C. Navodani, **G.M. Somaratne**, S.D. Maithreepala and L. Weerasinghe. (2022). A Cross-Sectional Study on Self-Reported Food Allergy Among Young Adult Students at University of Peradeniya Sri Lanka. The 4th International Conference on Food, Nutrition, Health, and Lifestyle 2022 (Nutricon 2022) "Future & Emerging Trends for 2022 in Nutrition, Food & Health" 15th – 16th July 2022. Page 21.

Madusanka O.W.S., P.P.A.J. Rathnayake., **Somaratne G.M.**, Beligala D.H. and Wimukthi G.G.R. Development of a Colour-Based Quality Analysis Tool for Sri Lankan Bee Honey. Fostering Opportunities for Technopreneurship in the New Normal. International Research Symposium – 2021. 320-327.

Somaratne, G., Nau, F., Ferrua, M. J., Singh, J., Ye, A., Dupont, D., Singh, R. P. and Flourey, J. Mapping the spatiotemporal disintegration and release of nutrient from egg white gel microstructure during in vitro gastric digestion. 8th International Symposium on "Delivery of Functionality in Complex Food Systems", Porto, Portugal. 7-10 July 2019 (poster presentation).

Somaratne, G., Nau, F., Ferrua, M. J., Singh, J., Ye, A., Dupont, D., Singh, R. P. and Flourey, J. Role of native egg white protein gel microstructure on the diffusion of gastric pepsin. 8th International Symposium on "Delivery of Functionality in Complex Food Systems", Porto, Portugal. 7-10 July 2019 (poster presentation).

Somaratne, G., Ferrua, M. J., Ye, A., Nau, F., Dupont, D., Singh, R. P. and Singh, J. Role of food initial microstructure on the softening kinetics of solid foods during simulated gastric digestion. 5th International Conference on "Food Structures, Digestion & Health", Rotorua, New Zealand. 30 September to 3 October 2019 (poster presentation).

Somaratne, G., Ferrua, M. J., Ye, A., Nau, F., Dupont, D., Singh, R. P. and Singh, J. Role of gastric juice diffusion on disintegration kinetics of solid foods during in vitro gastric digestion. 5th International Conference on "Food Structures, Digestion & Health", Rotorua, New Zealand. 30 September to 3 October 2019 (poster presentation).

Somaratne, G. M., Reis, M. M., Ferrua, M. J., Ye, A., Dupont, D., Nau, F., Flourey, J., Singh, R. P. (2018). Feasibility of using hyperspectral imaging to predict gastric juice diffusion into solid food structures during gastric digestion. Presented at 19th IUFOST World Food Congress Food Science & Technology 2018, Mumbai, India

Somaratne, G. M., Singh, J., Ferrua, M. J., Ye, A., Dupont, D., Nau, F., Singh, R. P. (2017). Role of gastric juice diffusion into steamed and fried, orange-fleshed sweet potatoes on the macro- and micro-structural changes and nutrient release during static in-vitro gastric digestion. Presented at NZIFST Annual Conference 2017 – Nelson, 4-6 July, 2017 (Oral Abstract)

International Conference Proceedings

Somaratne, G. M., Singh, J., Ferrua, M. J., Ye, A., Dupont, D., Nau, F., Singh, R. P. (2017). Diffusion of gastric juice and release of nutrients in fried and steamed, orange-fleshed sweet potatoes during in-vitro gastric digestion. 7th International Symposium on “Delivery of Functionality in Complex Food Systems”, Auckland, NZL (2017-11-05 - 2017-11-08).

G. M. Somaratne, B.D.R. Prasantha and A. Chandrasekara (2014). Effect of varietal differences and polishing levels on glycemic index and antioxidant properties of rice (*Oryza sativa* L.) – Peradeniya University International Research Session (IPURSE), Sri Lanka, 6th & 7th July 2014.

National Conference Proceedings

Dinushi, W.G., **Somaratne, G.M.**, Rathnayake, P.P.A.J., Beligala, B.A.D.H. Sugar Profile of Bee Honey of *Apis cerana* from Selected Geographical Locations in Sri Lanka, Proceedings of the Annual Scientific Sessions 2023, The Nutrition Society of Sri Lanka. 22-23 January 2023 (poster presentation).

H.H.A.C. Navodani, **G.M. Somaratne**, S.D. Maithreepala and L. Weerasinghe. (2022). A Cross-Sectional Study on the Prevalence of Food Allergies Among Young Adult Students at University of Peradeniya, Sri Lanka. Annual Scientific Sessions of the Nutrition Society of Sri Lanka – on 22nd and 23rd of January 2022. Page 47.

Hettiarachchi H.A.M.D., **Somaratne G.M.**, Chandrasekara A., Gunasekara D., Abeyrathne T.M. and Vindula I.B.S. (2022). The Design and Development of Glycemic Index (GI) Based Electronic Database Management System. Annual Scientific Sessions of the Nutrition Society of Sri Lanka – on 22 and 23 of January 2022. Page 74.

Chandimal A.S.J., **Somaratne G.M.**, Bandara Y.D.M.D.C.Y., Samarasekara M.A. and Thuduwwewatta N.D. (2022). Development of Database Management System for the Tabulation of Nutritional and Sensory Quality and Safety-related Information of Culinary Products Used in the Foodservice Industry. Annual Scientific Sessions of the Nutrition Society of Sri Lanka – on 22 and 23 of January 2022. Page 82.

Reviewer of Research Papers

- Reviewer of papers for 11th Young Scientists' Forum YSF Symposium 2023
- Reviewer of papers for 11th Young Scientists' Forum YSF Symposium 2021
- Reviewer of papers for Annual Scientific Sessions of the Nutrition Society of Sri Lanka - 2023
- Reviewer of papers for Annual Scientific Sessions of the Nutrition Society of Sri Lanka - 2021
- Reviewer of manuscript in Ceylon Journal of Science

Books, Book Chapters & Other Publications

Industrial Application of Functional Foods, Ingredients and Nutraceuticals Extraction, Processing and Formulation of Bioactive Compounds. Editors: C. Anandharamakrishnan and S Parthasarathi. Authors of section 3: Functional food and Nutraceuticals for disease and disorders 16. Gastrointestinal disorders. **Somaratne G.M.**, Chandrasekara A. ISBN: 9780128243121, 1st Edition - August 1, 2023 (In Press).

Manawadu T.N.D., **Somaratne G.M.**, Weerasinghe L., Muthurathnandan N., Hettiarachchi N., Demetrius T., Chandrasekara A. and Singh J, Healthy Shopping Guide for Health, and Well-being of Sri Lankans (ISBN 978-624-97482-1-7) in collaboration with Keells supermarket chain, Sri Lanka, 2022.

Chandimal A.S.J., **Somaratne G.M.**, Bandara Y.D.M.D.C.Y., Samarasekara M.A. and Thuduwwewatta N.D. Chefs' Guide on Shelf-life of Food Ingredients, and Culinary Products Used in the Food Catering Industry (ISBN 9786245887002) in collaboration with Cinnamon Hotels and Resorts, Sri Lanka, 2022.

Author of *The Sri Lankan Guide to Healthy Eating* booklet published by Department of Food Science & Technology, Faculty of Agriculture, University of Peradeniya, Sri Lanka (2013) – This booklet provides advice for healthy eating that are realistic, practical, and most importantly this is based on the best available scientific evidence.

Co-author of *Isurumaga - Food based entrepreneurship – DVD* published by Department of Food Science & Technology, Faculty of Agriculture, University of Peradeniya, Sri Lanka (2013) – This DVD teach people how to make great food products and thus create a successful startup of a food business. This is published in both Sinhala and English medium.

Editor of "*Food² – Food for thought & Food for the Future*" Newsletter launched for targeting Profood/Propack and Agbiz exhibition – 2013 by Society of Food Science and Technology, Faculty of Agriculture, University of Peradeniya, Sri Lanka

Undergraduate Research Conference Proceedings

Sachinthaka P.P.S., **Somaratne G.M.**, Silva F.H.C.A., How M.S., Amarasinghe, A.A.P.S.1 and Hettiarachchi A. Development of an In-vitro Gastric Digestion Model with Peristalsis Function for the Analysis of Food Gastric Digestion. Faculty of Agriculture Undergraduate Research Symposium (FAuRS-2021/22).

Manawadu T.N.D., **Somaratne G.**, Weerasinghe L., Muthurathnandan N., Hettiarachchi N., Jayaweera N., Demetrius T., Chandrasekara A. and Singh J. Development of Healthy Supermarket Initiatives and Strategies to Encourage Healthy Food Choices in the Retail Store Environment in Sri Lanka. Faculty of Agriculture Undergraduate Research Symposium (FAuRS-2021/22).

Nikalansooriya N.M.A.I., **Somaratne G.M.**, Maithreepala S.D., Gunasekara D.C.S., D. Sumith De Z. Abeyesiriwardena., Chandrasekara A., Dahanayake T.N., Karunarathna H.K.A.T. and Madumali K.D.U. Faculty of Agriculture Undergraduate Research Symposium (FAuRS-2021/22).

Undergraduate Research Conference Proceedings

Dahanayake T.N., **Somaratne G.M.**, Madarasinghe S., Jayawardena R., Nikalansooriya N.M.A.I., Karunarathna H.K.A.T. and Madhumali K.D.U. Characterization of Physicochemical Properties and Postprandial Response of Garlic and Bee Honey Combined Product. Faculty of Agriculture Undergraduate Research Symposium (FAuRS-2021/22).

Pussella P.D.P.C., **Somaratne G.M.**, Rathnayake P.P.A.J., Samarasekara M., Bandara C.Y., Wijelath W.A.G.E. and Madusanka U.G.Y. Digital Detection of Frying Oil Rancidity Levels and Colour Profiles Using a Mobile Application. Faculty of Agriculture Undergraduate Research Symposium (FAuRS-2021/22).

Kariyawasam K.S.T.K.P., **Somaratne G.M.**, Roy D., Silva D.D., Weththasinghe W.A.O.W. and Sandanika D.W.N. Development of Two Types of Isotonic Beverages with Functional Attributes Using Natural and Synthetic Ingredients. Faculty of Agriculture Undergraduate Research Symposium (FAuRS-2021/22).

Liyanage K.L.N.U., **Somaratne G.M.**, Chandrasekara A., Jayalath G.K.C., Wijesiri V.T., Bulathwatta A., Bandara U., Subasinghe E.I.W. and Liyanage K.L.B.P. Designing a Mobile-Based Nutrition Education Application Platform for Obese Sub-Fertile Women of Childbearing Age in Sri Lanka. Faculty of Agriculture Undergraduate Research Symposium (FAuRS-2021/22).

Hettiarachchi H.A.M.D., **Somaratne G.M.**, Chandrasekara A., Gunasekara D., Abeyrathne T.M., and Vindula I.B.S. 'Systematic Tabulation of Glycemic Index (GI) of Commonly Consumed Sri Lankan Foods and Development of GI Based Software'. Proceeding of the Faculty of Agriculture Undergraduate Research Symposium- 2020, University of Peradeniya, Sri Lanka, 155p.

Navodani C., **Somaratne G.M.**, Maithreepala S.D. and Weerasinghe L. Online Survey of Self-Reported Food Allergy among Young Adult Students at the University of Peradeniya in Sri Lanka. Proceeding of the Faculty of Agriculture Undergraduate Research Symposium - 2020, University of Peradeniya, Sri Lanka.

Chandimal A.S.J., **Somaratne G.M.**, Bandara Y.D.M.D.C.Y., Samarasekara M.A. and Thuduwwewatta N.D. Determination and Systematic Tabulation of Shelf-life of Food Ingredients, and Culinary Products Used in the Food Catering Industry. Proceeding of the Faculty of Agriculture Undergraduate Research Symposium - 2020, University of Peradeniya, Sri Lanka.

Madusanka O.W.S., P.P.A.J. Rathnayake., **Somaratne G.M.**, Beligala D.H. and Wimukthi G.G.R. Physicochemical characterization of bee honey based on the geographical origin in Sri Lanka. Proceeding of the Faculty of Agriculture Undergraduate Research Symposium - 2020, University of Peradeniya, Sri Lanka.

G. M. Somaratne, B.D.R. Prasantha and A. Chandrasekara (2013). Effect of varietal differences and polishing levels on glycemic index and antioxidant properties of rice (*Oryza sativa* L.), In proceedings of the first annual research session, Department of Food Science & Technology, Faculty of Agriculture, University of Peradeniya, Sri Lanka, 20th December 2013.

Development of Research Software/Mobile Apps

- Research team member of developed 'Aarya' mobile app for obese sub-fertile women to reduce and maintain their weight within the normal Body Mass Index (BMI) range by adopting proper dietary management and lifestyle modifications.
- Research team member of developed "Glycemic Spy" (Glycemic Index database management system with Glycemic Index calculator) Software targeting consumers and researchers.
- Research team member of developed custom-build electronic database of secondary shelf life of culinary ingredients to give a feasible guide of handling food ingredients for the chefs within the catering sector.
- Research team member of developed mobile app for digital detection of frying oil rancidity levels and colour profiles targeting the chefs within the catering sector.

Research Grants

- **University of Peradeniya - University Research Grants, URG/2021/45/Ag**, Title of Research Project: Development of an *In vitro* Dynamic Gastric Digestion Model with Peristalsis Function for the Analysis of the Food Gastric Digestion Process.

Training Programs

- **Certificate in Teaching in Higher Education (CTHE)**, the Academic Staff Induction Programme 2020, The Staff Development Center (SDC) at the University of Peradeniya.

Thesis/Dissertation

PhD Thesis: Role of food material properties on the mechanisms of solid food disintegration during gastric digestion; Supervisors - Dr. Jaspreet Singh, Dr. Maria J Ferrua, Prof. Aiqian Ye, Dr. Didier Dupont, Prof. Françoise Nau, Dr. Juliane Flourey, Dist. Prof. Paul R. Singh

MSc Directed Study: Effect of storage period on starch digestibility, nutrient bioavailability and antioxidant properties of green gram and cowpea. Supervisor - Dr. B.D. Rohitha Prasantha

BSc (Hons) thesis: Effect of Varietal Differences and Polishing Levels on Glycemic Index and Antioxidant Properties of Rice (*Oryza sativa* L.). Supervisors - Dr. B.D. Rohitha Prasantha and Dr. A. Chandrasekara

Undergraduate Research Supervision

- Supervised undergraduate research students of Faculty of Agriculture 2022 – 16 BFST Batch (7 students)
- Supervised undergraduate research students of Faculty of Agriculture 2020/21 – 15 BFST Batch (4 students)
- Supervised an undergraduate research student of Faculty of Science 2020/21 – 16 BFST Batch – Ms. W. G. Dinushi (S/16/034)

Postgraduate Research and Directed Study Supervision

- MSc Research Supervisor – Ms. Anne Tissera - 20456-CMB
- MSc Research Supervisor – Mr. S.M.D.S.C Senaratne - 18361-CMB
- Directed study supervisor – Ms. Chathuranga Hasithi Samarasinghe - CMB 20561
- Directed study supervisor – Ms. Oshini Prathibani - CMB 20446
- Directed study supervisor – Mr. A.A.A.B.M.R.D.B Wariyagama - CMB 20547
- Directed study supervisor – Mr. Malsha Samarasekara - 22311-PDN
- Directed study supervisor – Ms. Kanagalingam Shambavi - 22215-PDN
- Directed study supervisor – Ms. Ruvini Ishara - 22210-PDN

References

Prof. Jaspreet Singh

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Prof. Françoise Nau

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I hereby certify that the information given in this portfolio document is true and correct to the best of my knowledge.

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27/02/2023