N A D I N E A D E L L I A L E D E S M A

E-mail: na.ledesma@gmail.com; Mobile: (+63)9257730725
ORCID: 0000-0002-3680-1673

EXECUTIVE SUMMARY

- PhD in Agricultural and Environmental Biology from the University of Tokyo, Japan
- Dynamic plant scientist with 30 years of expertise in addressing environmental challenges in crop production and enhancing fruit quality through innovative research and field trials.
- Published author in prestigious journals, driving impactful findings in plant physiology and climate resilience.
- Proven track record in research development and fostering collaboration across multidisciplinary teams to optimize crop production.
- Proven track record in teaching, including instructional materials development, innovative instructional techniques, and thesis advising at the undergraduate and graduate levels.

EDUCATION

[2001 – 2004] **PhD Agricultural and Environmental Biology,** University of Tokyo, Japan
Dissertation: A comparative study on the effects of high temperature stress on the reproductive growth in two main strawberry cultivars.

[1999 – 2001] **MS Agricultural and Environmental Biology,** University of Tokyo, Japan
Thesis: Effects of high temperature on fruit growth and protein expression in strawberry plants

[1998 – 1999] **Research Student,** University of Tokyo, Graduate School of Agricultural and Life Sciences, Laboratory of Horticultural Science

[1991 – 1996] **BS Agriculture (major in Horticulture),** University of the Philippines Los Baños

POSTDOCTORAL TRAINING

[2004 – 2007] **Postdoctoral Researcher,** University of Tokyo, Graduate School of Agricultural and Sciences, Laboratory of Horticultural Science

WORK EXPERIENCE

June 2018 – Current, College of Agriculture, University of Rizal System, Tanay, Rizal, Philippines
Associate Professor

- Selection of courses taught: Basic Biotechnology; Biochemistry; Organic Chemistry; Precision Agriculture; Postharvest Handling and Seed Technology; Horticultural Crop Production and Management
- Conceptualized, authored, and co-authored online learning modules for the following courses: Biochemistry, Organic Chemistry, Plant Physiology, Crop Protection, Animal and Crop Biopesticides Technology
- Serving as member of the College Research and Extension Committee to create research and extension goals geared towards climate change resilience for the College of Agriculture
- Publishing in peer-reviewed internationally recognized journals.

Associate Professor
January 2017 – April 2018, De La Salle Araneta University, Malabon City, Philippines

- Selection of courses taught: Agroecology, General Biology, Botany, Seed Science and Technology
- Developed and implemented field trials of strawberry varieties to evaluate plant responses to heat stress, optimizing management practices for improved yield.

Assistant Professor
January 2014 – December 2016, De La Salle University, Manila, Philippines

- Selection of courses taught: Environmental Science, Botany, Biotechnology, and Agroecology

- Led a research project focusing on molecular techniques of strawberry variety verification to ensure authenticity in marketability of fruit quality and flavor, publishing findings in a peer-reviewed journal.

Instructor of English
February 2005 – July 2010, Berlitz Japan, Inc., Tokyo, Japan

- Led English instruction for diverse learners, enhancing critical thinking and communication skills through innovative teaching methods.
- Collaborated with a multinational and multicultural faculty to integrate interdisciplinary approaches, fostering a cohesive learning environment.
- Developed curriculum and assessment tools to improve student engagement and performance.

Part-time Agricultural Researcher
April 2007 – March 2008, University of Tokyo, Faculty of Agriculture, Laboratory of Horticulture

- Conducted research on the effects of high temperature stress on strawberry plants in relation to changes in fruit production at the molecular level.

University Research Associate I
July 1996 – March 1998, Institute of Plant Breeding, University of the Philippines at Los Baños

- Prepared and conducted surveys of small-scale ornamental plant growers in the Philippines.
- Analyzed survey results and prepared progress reports for funding government agency.
- Prepared a brochure on mass propagation techniques of ornamental plants based on survey findings.
- Conducted trainings on mass propagation of ornamental plants for small-scale growers in the Southern Tagalog region of the Philippines.

SCHOLARLY PUBLICATIONS

1. **NA Ledesma**, JM Matulac, JE Sevilleja, ML Enriquez. 2023. Detecting misidentifications of strawberry cultivars in the Philippines using single nucleotide polymorphism markers. *Journal of Horticultural Science and Biotechnology*. https://doi.org/10.1080/14620316.2022.2162444
2. AH Fernando, RRP Vicerra, LA Gan Lim, AB Maglaya, **N Ledesma**, J Gonzaga. 2021. Determination of a tomato growth in a plant chamber using neural network (Conference paper). 2021 IEEE 13th International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management (HNICEM). DOI: 10.1109/HNICEM54116.2021.9731903
3. J Chua, JM Banua, I Arcilla, A Orbecido, ME de Castro, **N Ledesma**, C Deocaris, C Madrazo, L Belo. 2019. Phytoremediation potential and copper uptake kinetics of Philippine bamboo species in copper contaminated substrate. *Heliyon*, 5: e02440. https://doi.org/10.1016/j.heliyon.2019.e02440
4. S Tagle, R Pena, F Oblea, H Benoza, **N Ledesma**, J Gonzaga, LAG Lim. 2018. Development of an Automated Data Acquisition System for Hydroponic Farming (Conference paper). 2018 IEEE 10th International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment and Management (HNICEM). https://doi.org/10.1109/HNICEM.2018.8666373
5. LP Belo, AH Orbecido, AB Beltran, E Vallar, MC Galvez, RCP. Eusebio, **NA Ledesma**, CC Deocaris. 2018. Water quality assessment of Meycauayan River, Bulacan, Philippines. *Sylvatrop*, 28(2): 123–140.
6. DEP Sumalapao, CG Tuppil, AAC Urtula, DM Valdestamon, LMD Villanueva, **NAA Ledesma**. 2018. Tolerance of mung bean (*Vigna radiata* (L.) Wilczek) to lactic acid, a potential herbicide: growth and morphology. *The Journal of Animal and Plant Sciences*. 28(1): 138–145.
7. EAH Fernando, AA Bandala, LAG Lim, AB Maglaya, **N Ledesma**. 2017. Design of a fuzzy logic controller for a vent fan and grow light in a tomato growth chamber (Conference paper). 2017 IEEE 9th International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment and Management (HNICEM). https://doi.org/10.1109/HNICEM.2017.8269526
8. **NA Ledesma**, CS Ragay, JC Delgado, DP Padua. 2017. Chilling differentially affects strawberries grown under high temperature stress. *Philippine Agricultural Scientist.* 100(2): 211–221.

https://pas.cafs.uplb.edu.ph/download/chilling-differentially-affects-strawberries-grown-under-high-temperature-conditions/

9. **NA Ledesma** and S Kawabata. 2016. Responses of two strawberry cultivars to severe high temperature stress at different flower development stages. *Scientia Horticulturae.* https://doi.org/10.1016/j.scienta.2016.09.007
10. **NA Ledesma** and N Sugiyama. 2008. Effect of high temperature stress on the reproductive growth of strawberry cvs. 'Nyoho' and 'Toyonoka'. *Scientia Horticulturae.* https://doi.org/10.1016/j.scienta.2007.12.010
11. **N Ledesma** and N Sugiyama. 2005. Pollen quality and performance in strawberry plants exposed to high temperature stress. *Journal of the American Society for Horticultural Science.* https://doi.org/10.21273/JASHS.130.3.341
12. **NA Ledesma**, N Sugiyama, S Kawabata. 2004. Effect of high temperature on protein expression in strawberry plants. *Biologia Plantarum*, 48(1): 73–79. https://doi.org/10.1023/b:biop.0000024278.62419.ee

CURRENT RESEARCH FOCUS

1. Valorization of agricultural waste (crops)
2. Indoor farming
3. Molecular assisted screening for crop improvement

PAST RESEARCH PROJECTS

4. Project Title: The feasibility of using bamboo pipes as a low-cost, environment-friendly alternative to polyvinyl chloride (PVC) pipes used in hydroponic vegetable production.
   Funded by the University Research Coordination Office, De La Salle University
   Main Proponent; Duration: January 2016 to December 2016
5. Project Title: Identification and characterization of strawberry cultivars grown in the Philippines through single nucleotide polymorphisms (SNPs).
   Funded by the University Research Coordination Office, De La Salle University
   Main Proponent; Duration: March 2016 to December 2016
6. Project Title: Evaluation of heavy-metal induced oxidative stresses and phytoremediation potential of native Philippine bamboo species.
   Funded by the University Research Coordination Office, De La Salle University
   Co-proponent; Duration: September 2016 to December 2016

RELEVANT TRAININGS AND WORKSHOPS

1. **SEARCA Agri-Innovator Program,** SEAMEO SEARCA, February 10 to 14, 25 to 27, 2025.
2. **Basic Research Ethics,** Philippine Health Research Ethics Board, May 11 to 12, 2023.
3. **Advanced International Certificate Course on Intellectual Property (IP Panorama)**, KIPO, WIPO, KAIST, KIPA, April to June 2021,
4. **Advanced Course on Basics of Patent Drafting**, WIPO Academy, April 8 to July 11, 2021
5. **Geospatial and Environmental Analysis**, University of California, Davis through Coursera, March to May 2021
6. **GIS Data Formats, Design and Quality**, University of California, Davis through Coursera, December to February 2021
7. **Fundamentals of GIS**, University of California, Davis through Coursera, October to November 2020
8. **Higher Education Institutions' Training–Workshop on Research Project Development for Agriculture 4.0** organized by CHED and SEARCA, October 12–13, 2020.
9. **Training-Workshop on Good Agricultural Practices (GAP) for Emerging Agricultural Commodities Amid COVID-19 Pandemic** hosted by SEARCA, August 27–28, 2020.

10. **First Advanced Molecular Biology Workshop** organized by BSRL-NSRI University of the Philippines Diliman, Quezon City, September 4 to 6, 2019.
11. **General Course on Intellectual Property**, WIPO Academy, August 2 to September 14, 2019
12. **Localising Strategies in Making Cities Resilient to Disasters**, De La Salle University and University of Huddersfield (UK) with funding from DOST-PCIEERD and The British Council Newton Fund, January 22 to 26, 2018**.**
13. **National Adaptation Plans: Building Climate Resilience in Agriculture,** UNITAR, FAO, UNDP, UNCC:Learn, November 13 to December 22, 2017.

OTHER PROFESSIONAL ACTIVITIES

1. Resource Person, Department of Trade and Industry Antique Provincial Office, "Orientation on Agri-preneurship for Coffee and Cacao", September 7, 2017, San Jose, Antique, Philippines
2. Ad hoc Peer Reviewer for *Agronomy Journal*, *Journal of the American Society for Horticultural Science*, *Journal of Plant Growth Regulation*, *Environmental and Experimental Botany*, and *European Journal of Horticultural Science*

PROFESSIONAL MEMBERSHIPS

1. Member (2009 – Present), International Society for Horticultural Science
2. Member (2015 – Present), Philippine Fruits Association, Inc.
3. Member (2019 – Present), Crop Science Society of the Philippines, Inc.

SKILLS

Languages: Filipino, English, Japanese (2004 Japanese Language Proficiency Test, Level 2)