
HAZEL ALENA D. TAN, M.Sc.

Master of Science Food Science
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Educational Attainment

School	Year Graduated	Degree/Recognition Received
❖ Alpha Christian School (ACS), Visca, Baybay City, Leyte	March 2003	1 st honorable mention
❖ Visayas State University Laboratory High School (VSU- LHS), Visca, Baybay City, Leyte	March 2007	With honors
❖ Visayas State University (VSU), Visca, Baybay City, Leyte	April 2011	Bachelor of Science in Food Technology ➤ Thesis: "Effect of Enzymatically-degraded Taro (<i>Colocasia esculenta</i> L. Schott) on the Growth of Lactic Acid Bacteria and Sensory Quality of Yoghurt"
❖ University of the Philippines Los Baños (UPLB), College, Laguna	December 2014	Master of Science Food Science (minor in Dairy Science) ➤ Thesis: "Efficacy of Alginate-Taro (<i>Colocasia esculenta</i> L. Schott) Starch Encapsulation of Starter Culture for Yoghurt Processing"

Work Experience

Institute/Department	Designation	Inclusive Dates	Work Description
❖ National Institute of Molecular Biology and Biotechnology (BIOTECH), UPLB	University Researcher I	01 May 2016 – present	Assisting project leaders on different core projects as study leader, handling of OJT/Thesis students as co-adviser, conduct experiments on the field of food microbiology, preparing of progress and annual reports
❖ Philippine Rootcrops Research and Training Center (PRCRTC), VSU	University Research Associate I	01 January 2016 – 27 February 2016	Conduct experiments on the Project "Development of Microbial Starter with Optimum Stability for Fermented Alcoholic and Non-alcoholic Beverages from Purple Taro" and making reports
❖ National Institute of Molecular Biology and Biotechnology (BIOTECH), UPLB	University Research Associate I	17 March 2014 – 17 June 2015	Conduct experiments on the Project "Biotechnological Conversion of Coconut Processing Wastes into Agro-Industrial Microbial Cultures and High Value Products", assisting of thesis students in the laboratory, making of progress and terminal reports

❖ National Coconut Research Center (NCRC-V), VSU	Research Aide I (Emergency Work)	06 June 2011 – 24 June 2011	Propose research projects on coconut (more on product development), conduct experiments and help in developing different products from coconut
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Papers Presented

Title	Title of Conference	Date and Location
❖ Efficacy of Alginate-Taro (<i>Colocasia esculenta</i> L. Schott) Starch Encapsulation of Starter Culture for Yoghurt Processing (<i>Oral Presentation</i>)	5 th International Conference of Indonesian Society for Lactic Acid Bacteria	13-14 November 2015; Faculty of Agricultural Technology, Gadjah Mada University, Yogyakarta, Indonesia
❖ Utilization of Taro (<i>Colocasia esculenta</i> L. Schott) for Increased Viability of Lactic Acid Bacteria in Yoghurt Processing (<i>Oral Presentation</i>)	4 th AFSA International Conference on Food Safety and Food Security	10-12 August 2018; Angkor Paradise Hotel, Siem Reap, Cambodia
❖ Purification and Characterization of Milk Clotting Enzyme Produced by <i>Rhizopus chinensis</i> BIOTECH 3273 (<i>Oral Presentation</i>)	International Symposium and Training Workshop on Microbial Utilization in conjunction with the 20 th MSP Anniversary and 6 th Annual AnMicro Conference and iCollect Workshop	27 April 2019; SEARCA, UPLB, College, Laguna
❖ Linamarase-producing Lactic Acid Bacteria (LAB) for Cassava (<i>Manihot esculenta</i> Crantz) Sourdough Fermentation (<i>Poster Presentation</i>)	10 th Asian Conference for Lactic Acid Bacteria (ACLAB-10)	29-31 August 2019; Grha Sabha Pramana, Universitas Gadjah Mada, Yogyakarta, Indonesia

Research Involvements

Title	Involvement	Funding Agency
❖ Search for Novel Bacteriocin from Lactic Acid Bacteria (LAB) Isolated from Various Sources	Study Leader	BIOTECH Core
❖ Characterization of Microbial Rennet Produced from Solid Substrate Fermentation	Study Leader	BIOTECH Core
❖ Polyglutamic Acid (γ -PGA) Production from <i>Bacillus</i> Fermentation	Study Leader	BIOTECH Core
❖ Selection and Characterization of Probiotic Lactic Acid Bacteria for Fermented Food Application	Study Leader	BIOTECH Core
❖ Formulation, Production and Application of LAB Starter Culture in Dairy Products	Study Leader	BIOTECH Core

❖ Production and Commercialization of Microbial Rennet	Study Leader	Income
❖ Studies on the Bioactivity Profile of the Extracts from Different Indigenous Plants and Weeds	Study Leader	BIOTECH Core
❖ Maintenance and Preservation of Existing Collection of Microorganisms with Food Biotechnology Applications	Project Leader (Main Proponent)	BIOTECH Core
❖ Genetic Evaluation and Safety Assessment of Selected Lactic Acid Bacteria and Other Microbial Groups for Use as Functional Starter Culture	Study Leader	BIOTECH Core
❖ Development of Process from the Conversion of Starch Containing Food Materials into Sweetener/Sugar Substitute	Study Leader	BIOTECH Core
❖ Probiotic and Technological Characterization of Lactic Acid Bacteria (LAB) from Various Sources	Project Leader	BIOTECH Core
❖ Hydrolysis of Cassava (<i>Manihot esculenta</i> Crantz) into Natural Sweeteners by Microbial Enzymes	Study Leader (Main Proponent)	Department of Agriculture – Bureau of Agricultural Research (DA-BAR)
❖ Utilization of Cassava (<i>Manihot esculenta</i> Crantz) in Sourdough Fermentation by Linamarase-producing Lactic Acid Bacteria and Yeasts from Existing Collection of Cultures	Study Leader (Main Proponent)	Department of Agriculture – Bureau of Agricultural Research (DA-BAR)
❖ Internship/OJT/Thesis (UPLB) ✓ Carla Kristine M. Silva (<i>BS in AgriBiotech</i>) ✓ Lawrence Jacob A. Alterado (<i>BS in AgriBiotech</i>) ✓ Hannah A. Mercado (<i>BS in Biology</i>) ✓ Driezel B. Alterado (<i>BS in FoodTechnology</i>)	Co-adviser	-

Organizations/Committees

Details	Involvement	Term
❖ Asian Food Safety and Security Association (AFSA)	Member	August 2018 – present
❖ Philippine Society for Lactic Acid Bacteria (PSLAB)	Secretary	November 2017 – present
❖ Philippine Network of Microbial Culture Collection Inc. (PNMCC)	Member	November 2017 – present
❖ Documentation Committee (during the 20 th MSP Anniversary and 6 th Annual AnMicro Conference, at SEARCA, UPLB, College, Laguna)	Member	25-27 April 2019
❖ Physical Arrangement, Exhibit and Food Committee (during the Joint 17 th PNMCC General Assembly and Annual Symposium and 10 th PSLAB Scientific Meeting and Assembly at Dr. Vicente Dy Sun Sr. Hall, Yakult Philippines, Inc., Ermita, Manila)	Member	11 November 2017

❖ Secretariat and Socials Committee (during the 9 th PSLAB Scientific Meeting and 4 th AFSLAB International Symposium at SEARCA UPLB, College, Laguna)	Member	22-24 October 2014
❖ Quality Management-Technical Working Group: Documentation and Calibration Committee (ISO 9001:2015)	Member	01 January 2019 - present
❖ Equipment Committee	Member	01 January 2019 - present
❖ Committee on Social and Cultural Affairs	Member	01 January 2017 - present
❖ Performance-based Bonus (PBB) Committee	Member	01 January 2019 - present
❖ Website Committee	Member	01 January 2020 - present
❖ BIOTECH COVID-10 Task Force	Member	01 March 2020 - present

Trainings/Seminars/Conference

Title/Description	Inclusive Dates	Location
❖ Food Security Challenges and Opportunities under the New Normal: A Webinar in Commemoration of 9 Years of PCAARRD Excellence (GALING-PCAARRD)	30 June 2020	Virtual (Facebook Live)
❖ Biotech Tools for Pandemic Response: A Closer Look at Agricultural Biotechnology Contributions	27 June 2020	Virtual (Online Seminar)
❖ Sharing of Singapore's Experience in Ensuring Food Safety during the COVID-19 Pandemic	26 June 2020	Virtual (Webinar)
❖ Food Safety Amidst COVID-19: Adapting to the New Normal	25 June 2020	Virtual (Technical Webinar)
❖ Development of Pipeline for the Production of Eicosapentanoic Acid (EPA) and Protein from Nannochloropsis	04 December 2019	BIOTECH-UPLB
❖ Fermentation, Food and the Philippines: Science and Culture	15 May 2019	BIOTECH-UPLB
❖ Symposium during the International Symposium and Training Workshop on Microbial Utilization in conjunction with the 20th MSP Anniversary and 6th Annual AnMicro Conference and iCollect Workshop	27 April 2019	SEARCA, UPLB
❖ Training Workshop on Module 1. iCollect Workshop (International Symposium and Training Workshop on Microbial Utilization in conjunction with the 20th MSP Anniversary and 6th Annual AnMicro Conference and iCollect Workshop)	26 April 2019	SEARCA, UPLB

❖ iCollect Lecture (<i>International Symposium and Training Workshop on Microbial Utilization in conjunction with the 20th MSP Anniversary and 6th Annual AnMicro Conference and iCollect Workshop</i>)	25 April 2019	SEARCA, UPLB
❖ Seminar on Response Surface Methodology (RSM) using Design Expert	28 November 2018	BIOTECH-UPLB
❖ Seminar on Refresher Course on the Proper Use of Biological Safety Cabinets and Autoclaves: An Echo Seminar of Lessons of PH Abbot 51 st Semester	29 October 2018	BIOTECH-UPLB
❖ Study on the Control of Root Nodule Formation in Soybean through Defense Response induced by Single/Co-inoculation of Kikuichi and <i>Bradyrhizobium</i>	29 August 2018	BIOTECH-UPLB
❖ 4 th AFSA International Conference on “Food Safety and Food Security”	10-12 August 2018	Angkor Paradise Hotel, Siem Reap, Cambodia
❖ Seminar on Integrating Microbial Genomics in Public Health and Environment, from Antibiotic Production to Antibiotic Resistance	31 July 2018	BIOTECH-UPLB
❖ Bio-Rad® V3 Western Workflow™: Welcome to the Fast Lane	29 May 2018	BIOTECH-UPLB
❖ Training on Equipment Verification – (Small Volumes, Thermometer, Enclosure, Pressure Gauge, pH Meter, and Conductivity Meter)	04 May 2018	BIOTECH-UPLB
❖ Training on Estimation of Uncertainty of Measurement – Calibration of Thermometer, Enclosure, Weighing Instrument, pH Meter, Conductivity Meter and Small Volumes)	03-04 May 2018	BIOTECH-UPLB
❖ Basic Laboratory Equipment Calibration on Small Volumes (Pipettor, Burette, Volumetric Flask, Pipette)	18 April 2018	BIOTECH-UPLB
❖ Training on ISO Documentation for Document Controllers (DCO)	12 April 2018	BIOTECH-UPLB
❖ Training-Workshop on Internal Audit on ISO 9001:2015	03-04 April 2018	BIOTECH-UPLB
❖ Seminar-Workshop on QMS Documentation based on ISO 9001:2015 Requirements	05 March 2018	BIOTECH-UPLB
❖ Echo Seminar on 7 th International Training Course on Microbial Taxonomy on Actinomycetes and Gram-positive Bacteria	28 February 2018	BIOTECH-UPLB
❖ Seminar-Workshop on ISO: Risks and Quality Objectives	20 February 2018	BIOTECH-UPLB
❖ Seminar Workshop on A Beginners’ Guide to Genetic Engineering	12 December 2017	BIOTECH-UPLB
❖ Introduction to Laboratory Biosecurity	15 November 2017	BIOTECH-UPLB

❖ 17 th PNMCC General Assembly Meeting and Annual Symposium and 10 th PSLAB Scientific Meeting and Assembly (<i>Theme: Probiotics: Your Healthy Option</i>)	11 November 2017	Dr. Vicente Dy Sun Sr. Hall, Yakult Philippines, Ermita, Manila
❖ RNA Interference (RNAi) as a Potential Tool for Disruption of Plant Virus Transmission and Management of Insect Pests	18 October 2017	BIOTECH-UPLB
❖ Variations in Heavy Metal Mobility and Availability in Soil Plant Continuum as affected by Pyroligneous Acid	14 June 2017	BIOTECH-UPLB
❖ Intensive Harmonized Gender and Development Guidelines (HGDG) Training-Workshop for Researchers	24-25 May 2017	Hotel Kimberly, Tagaytay City
❖ Identification of Medically Important Fungi using Molecular Methods and Changes in Fungal Taxonomy	04 April 2017	BIOTECH-UPLB
❖ Regional Forum on State-of-the-art of Agricultural Research and Development and its Implications to ASEAN Integration	27-28 February 2017	SEARCA, College, Los Baños, Laguna
❖ Ham/Bacon Making	06 December 2016	Food and Feed Laboratory, BIOTECH-UPLB
❖ Health Forum 2016 (during the 12 th National Biotechnology Week)	24 November 2016	Sulo Riviera Hotel, Quezon City
❖ Lab to Market Workshop: A Roadmap to Commercialization of BIOTECH R&D	23 November 2016	DA BPI NSQCS, Visayas Ave., Diliman, Quezon City
❖ USAID STRIDE Innovation Workshop	15 November 2016	The Makati Diamond Residences, Makati, Philippines
❖ Awareness Seminar: ISO/IEC 17025:2005	20 September 2016	BIOTECH-UPLB
❖ Turnitin & Elsevier User Training: Promoting Original Writing and Academic Integrity with Turnitin/Empowering Research through Elsevier's Scopus and Science Direct	15 August 2016	BIOTECH-UPLB
❖ Capture and Detection of Bacterial Pathogens using Functionalized Nanoparticles	06 June 2016	BIOTECH-UPLB
❖ Orientation Program for Recently Hired UPLB Reps	12 February 2016	ICOPED, UPLB
❖ Colloquium Series #2: My 20-year attendance in technology utilization and commercialization in the US and Philippines/Spinning-off a BIOTECH Company in the Philippines: The LAB-in-a-MUG Project	10 February 2016	BIOTECH-UPLB
❖ Colloquium Series #1: Communicating Food Security and Biotechnology and Entrepreneurship in the Academia	09 February 2016	BIOTECH-UPLB
❖ Working Safely with Biological Safety Cabinet, Laminar Flow Cabinet and Fume Hood Seminar	28 January 2015	BIOTECH-UPLB

❖ The use of BIOTECH Rennet and Lactic Acid Bacteria for Dairy Processing	20 November 2014	BIOTECH-UPLB
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Recognitions Received

Description of Award/Citation	Award-giving Body	Date Received
❖ Outstanding Junior Researcher Award – 40 th Anniversary Celebration of BIOTECH: Excellence and Innovation towards Sustainable Development (held on 18 th of November 2019 at BIOTECH-UPLB)	BIOTECH-UPLB	18 November 2019
❖ Mentor – PSHSS Science Immersion Program 2019 (held on 24 th of June – 05 th of July 2019 at BIOTECH-UPLB)	DOST – Philippine Science High School CALABARZON Region Campus	05 July 2019
❖ Reviewer - Current Research in Nutrition and Food Science (International, Scopus-indexed Journal) ISSN: 2347-467X, Online ISSN: 2322-0007	Enviro Research Publishers	25 January 2019
❖ Resource Speaker – 2019 Seminar Lecturer's Training Program (held on 24 th of January 2019 at BIOTECH-UPLB)	Yakult Philippines Incorporated	24 January 2019
❖ Resource Speaker/Lecturer – Lecture Seminar about Lactic Acid Bacteria (held on 22 nd of February 2018 at BIOTECH-UPLB)	BIOTECH-UPLB	22 February 2018
❖ Resource Speaker – Training on Cheese-making using BIOTECH Rennet (held on 12 th of January 2018 at Food Laboratory, BIOTECH)	BIOTECH-UPLB	12 January 2018
❖ Resource Speaker – Training on Cheese-making using BIOTECH Rennet (held on 9 th of January 2018 at Food Laboratory, BIOTECH)	BIOTECH-UPLB	09 January 2018
❖ Training Assistant – Cheese-making with BIOTECH Rennet (held on 5 th to 6 th of October 2017 at BIOTECH-UPLB)	BIOTECH-UPLB	06 October 2017
❖ Resource Person – Exploring Biology in the Tropics, Philippines Study Abroad Program (held on 28 th of June 2017 at BIOTECH-UPLB)	Texas A&M International University	28 June 2017
❖ Resource Speaker/Lecturer – Lecture Seminar about Lactic Acid Bacteria (held on 22 nd of June 2017 at BIOTECH-UPLB)	BIOTECH-UPLB	22 June 2017
❖ Resource Speaker/Lecturer – Lecture Seminar about Food, Feeds and Specialty Products Program (held on 14 th of June 2017 at BIOTECH-UPLB)	BIOTECH-UPLB	14 June 2017
❖ Game Organizer – BIOTECH Team Building (held on 21 st to 22 nd day of April 2017 at Villa del Prado Resort, Sariaya, Quezon Province)	BIOTECH-UPLB	22 April 2017
❖ Judge – Closed Door Defense (Exhibit and Project Presentation, Applied Science Category) – held of 26 th of February 2017 ay C-105, IBS, UPLB	UP Grains, UPLB	26 February 2017

❖ Training Assistant – Native White Cheese Production using “Rennet” Technology (held on 1 st to 2 nd of December 2016 at El Salvador Resort, Danao City, Cebu)	Municipality of Compostela, Cebu	02 December 2016
❖ Game Organizer – BIOTECH Christmas Party (held on 20 th of December 2016 at BIOTECH-UPLB)	BIOTECH-UPLB	20 December 2016
❖ Trainer – On-the-Job (OJT) Training/Research Internship Program (July-August 2016; 120 hours; held at Food Laboratory, BIOTECH-UPLB)	BIOTECH-UPLB	August 2016
❖ Resource Speaker – Techno-forum for Cheese Processors (held on 5 th of July 2016 at Laguna State Polytechnic University, Sta. Cruz, Laguna)	DOST-Provincial S&T Center (Laguna) and DTI-Laguna	05 July 2016
❖ Assistant Trainor – Proper Management of Carabao Production and Milk Processing (held on 25 th to 27 th of May 2016 at Diaspora Farm Resort, Brgy. Sta. Barbara, Bacolor, Pampanga)	Diaspora Farm Resort and Municipality of Bacolor, Pampanga	27 May 2016

Publications/Proceedings

- ❖ **Tan, H.A.D.**, Dizon, E.I., Barraquio, V.L. and Mercado, S.M. 2016. Efficacy of Alginate-Taro (*Colocasia esculenta* [L.] Schott) Starch Encapsulation of Starter Culture for Yoghurt Processing. *Journal of Science, Engineering and Technology*. 4:1-10. ISSN 2454-9732.
- ❖ Oliveros, M.C.R., Consolacion, J.M., Emnace, I.C., **Tan, H.A.D.**, Molo-Dealino, M., and Santos, N.R.D. 2014. Preliminary Evaluation of Microbial and Chemical Properties of Mechanically Deboned Poultry Meat in the Philippines. *Philippine Journal of Veterinary and Animal Sciences*. Vol. 40 (2) 2014. ISSN 0155-2173.
- ❖ **Tan, H.A.D.** and Tan, J.D. 2011. Effect of Enzymatically-Degraded Taro (*Colocasia esculenta* L. Schott) on the Growth of Lactic Acid Bacteria and Sensory Quality of Yoghurt. *Unpublished Undergraduate Thesis* at Visayas State University, ViSCA, Baybay City, Leyte. *Proceedings of the 1st Student Research Competition in Health Science and Technology* during the 5th Philippine National Health Research System (PNHRS) Week held on 10-12 August 2011 at L'Fisher Hotel, Bacolod City.
- ❖ Elegado, F.B., Mercado M.A., **Tan, H.A.D.**, Bangoy, J.A., and Gibas, R.R.M. 2020. Identification of Linamarase-producing Lactic Acid Bacteria and Yeasts for Cassava (*Manihot esculenta* Crantz) Sourdough Fermentation. *Conference Proceeding – 47th PSBMB Annual Convention: A Virtual International Conference at Philippine Rice Research Institute, Science City of Muñoz, Nueva Ecija, Philippines on 01-04 of December 2020*.
- ❖ **Tan, H.A.D.**, Elegado, F.B., Mercado, M.A., Bangoy, J.A. and Gibas, R.R.M. 2019. Linamarase-producing Lactic Acid Bacteria for Cassava (*Manihot esculenta* Crantz) for Sourdough Fermentation. *Conference Proceeding – The 10th Asian Conference on Lactic Acid Bacteria (Lactic Acid Bacteria – Gut Microbiota – Probiotic)* at Grha Sabha Pramana, Universitas Gadjah Mada, Yogyakarta, Indonesia on 29-31 of August 2019.
- ❖ Bangoy, J.A., **Tan, H.A.D.**, Mercado, M.A. and Elegado, F.B. 2019. Linamarase-producing Lactic Acid Bacteria and Yeast for Cassava-Sourdough Fermentation. *Conference Proceeding – 48th Annual Convention and Scientific Meeting: Promoting One Health through Microbiology Education, Research and Practice* at Clark Marriott Hotel, Clark Freeport Zone, Mabalacat, Pampanga on 18-19 of July 2019.
- ❖ Mercado, S.M., **Tan, H.A.D.** and Saguibo, J.D. 2019. Purification and Characterization of Milk Clotting Enzyme produced by *Rhizopus chinensis* BIOTECH 3273. *Conference Proceeding – International Symposium and Training Workshop on Microbial Utilization in conjunction with the 20th MSP*

Anniversary and 6th Annual AnMicro Conference and iCollect Workshop at SEARCA, UPLB, College, Laguna on 25-28 of April 2019.

- ❖ **Tan, H.A.D.**, Tan, J.D., Dizon, E.I., Barraquio, V.L. and Mercado, S.M. 2018. Utilization of Taro (*Colocasia esculenta* [L.] Schott) for Increased Viability of Lactic Acid Bacteria in Yoghurt Processing. *Published Conference Proceeding - 4th AFSA International Conference on Food Safety and Food Security* at Angkor Paradise Hotel, Siem Reap, Cambodia on 10-12 August 2018. Vol. 1: 0-69. ISSN 2306-2150.
- ❖ Saguibo, J.D., Calapardo, M.R., Mercado, M.A. and **Tan, H.A.D.** 2018. Formulation, Production and Application of LAB Starter Culture in Dairy Products. *Proceedings of BIOTECH Annual Review and Scientific Meeting*. 1(1):88-97.
- ❖ Mercado, S.M., **Tan, H.A.D.** and Saguibo, J.D. 2018. Characterization of Microbial Rennet Produced from Solid Substrate Fermentation. *Proceedings of BIOTECH Annual Review and Scientific Meeting*. 1(1):98-103.
- ❖ Mercado, M.A., **Tan, H.A.D.** and Perez, M.T.M. 2018. Polyglutamic Acid (γ -PGA) Production from *Bacillus* Fermentation. *Proceedings of BIOTECH Annual Review and Scientific Meeting*. 1(1):153-163.
- ❖ Perez, R.H., Perez, M.T.M., Mercado, M.A. and **Tan, H.A.D.** 2018. Search for Novel Bacteriocins from Lactic Acid Bacteria (LAB) from Various Sources. *Proceedings of BIOTECH Annual Review and Scientific Meeting*. 1(1):164-172.