

CURRICULUM VITAE

In Kyu Lee

[Research Interests: Soil Carbon Storage Mechanisms through Biomass, Sustainable Agriculture, Soil-Plant Interaction]

[Education]

· Mar. 2022 – Feb. 2024: M. S., Department of Smart Agriculture Convergence, Graduate School of General Studies, Kangwon National University, Chuncheon, Korea (Prof. Youn Su Lee)

· Feb. 2016 – Feb. 2022: B. S., Department of Plant Resource Applied Science, College of Agricultural and Life Sciences, Kangwon National University, Chuncheon, Korea (Mar. 2016 – Dec. 2018: Military service in Korean Army)

[Professional experience]

· **Research Assistant**

Apr. 2025 – Present: Department of Applied Biology and Chemistry, College of Agriculture and Life Sciences, Seoul National University, Seoul, Korea (Prof. Kyung Min Kim).

Mar. 2023 – Feb. 2024: Department of Life Sciences, POSTECH, Pohang, Korea (Prof. Jong Hum Kim).

[Research experience and papers]

· **Research on environmental waste recycling and soil environmental changes and plant growth effects**

(3) Correlation Analysis Study Between Spent Mushroom Substrate and Microbial Community (**First Author**, **The Korean Journal of Mycology**, 2024).

(2) Determination of Antifungal Activity on Pepper Anthracnose and Plant Growth Promoting Activity of *Pleurosporum camtschaticum* Root Extract (**First Author, Research in Plant Disease, 2023**).

(1) Effect of Organic Fertilizers and Plant Growth-Promoting Microorganisms on Lettuce Growth (**Co-Author, Journal of Agricultural, Life and Environmental Sciences, 2023**).

· **Analysis of the interaction effects between beneficial microorganisms and plant pathogens**

(4) Potentiality of Beneficial Microbe *Bacillus siamensis* GP-P8 for the Suppression of Anthracnose Pathogens and Pepper Plant Growth Promotion (**Co-Author, The Plant Pathology Journal, 2024**).

(3) Effects of Antagonistic on *Acidovorax citrulli* in Field Experiments (**Co-Author, Journal of Agricultural, Life and Environmental Sciences, 2024**).

(2) Efficacy of Antagonistic Bacterial Isolates in Suppressing Sclerotinia rot and Promoting Growth in Lettuce (**Co-Author, Journal of Agricultural, Life and Environmental Sciences, 2022**).

(1) Selection and Characterization of Antagonistic Microorganisms for Biological Control of *Acidovorax citrulli* Causing Fruit Rot in Watermelon (**Co-Author, Research in Plant Disease, 2022**).

· **Microbial characterization and identification**

(1) Characterization of Newly Recorded *Talaromyces veerkampii* Isolated from Field Soil in Korea based on Morphology and Multigene Sequence Analysis (**Co-Author, The Korean Journal of Mycology, 2022**).

(2) Morphological and Molecular Characterization of the Newly Reported *Penicillium pimiteouiense* from Field Soil in Korea (**Co-Author, The Korean Journal of Mycology, 2022**).

[Poster presentations]

(6) Improving plant growth by degrading caffeine utilizing beneficial microorganisms for the agricultural use of spent coffee grounds (**The Korea Society Plant Pathology, Fall International Conference, Busan, 2024**).

(5) Research of antagonistic effects of beneficial microorganisms isolated from Spent Mushroom Substrates (SMS) and Bio-char conversion properties for Recycling (**The Korea Society Plant Pathology, Fall International Conference, Jeju, 2023**).

(4) Biochemical characterization and volatile organic compounds production by rhizobacteria against plant anthracnose diseases (**The Korea Society of Mycology, Cheonan, 2022**).

(3) Development of eco-friendly seedling trays made with a combination of beneficial microorganisms and coffee grounds to cultivate agricultural crops (**The Korea Society Plant Pathology, Fall International Conference, Suncheon, 2022**).

(2) Verification of Plant Growth Promotion Effect of *Bacillus licheniformis* Isolated from Natural Organic Fertilizer (**The Korea Society Plant Pathology, Fall International Conference, Suncheon, 2022**).

(1) Comparative Microbiome Analysis of Watermelon Leaf Samples for the Detection of *Acidovorax citrulli* (**The Korea Society Plant Pathology, Fall International Conference, Online, 2021**).

[Patents]

(2) Method for manufacturing eco-friendly seedling trays using spent coffee grounds and waste paper (10-2776476-00-00, 2025).

(1) Mushroom Growing and Insect Breeding Kit (10-1705658-00-00, 2017).

[Honors and awards]

(10) R&D Young Creator Research Contest, Grand Prize: 1st place nationwide (**Korea Institute of Planning and Evaluation for Technology in Food, Agriculture and Forestry, 2023**).

(9) International Plant Pathology Society Conference, Best Poster Presentation (**The Korea Society Plant Pathology, 2022**).

(8) Social Innovation Idea Contest, Excellence Prize (**KT&G, 2022**).

(7) Industry-Academia Cooperation Contest, Governor's Award (**Gangwon-do, 2021**).

(6) University Student Start-up Contest, Grand Prize (**Gangwon-do, 2021**).

(5) Public Institution Analysis Contest, Gold Prize (**Kangwon National University, 2021**).

(4) Social Innovation Idea Contest, Excellence Prize (**KT&G, 2021**).

(3) Energy Social Venture Contest, Excellence Prize (**Korea Hydro & Nuclear Power, 2021**).

(2) Agricultural Industry Idea Contest, Excellence Prize (**Uiseong-gun, 2021**).

(1) Energy Contest, Encouragement Prize (**Korea Midland Power Co., Ltd., 2021**).

[Skills]

Microbiological Techniques for Plants: Microbial Isolation, Identification, Culturing, Inoculation.

Molecular Biology Techniques: PCR, RT-PCR, Western Blot, Plant Transformation, Microbial Cloning (HiFi, LR Reaction), DNA/RNA Extraction and Analysis.

Plants Handled: *Arabidopsis thaliana*, *Nicotiana benthamiana*, Pepper, Cabbage, Maize, Ginseng, etc.

Analysis: Soil microbiome analysis using NGS (Next-Generation Sequencing).

[Certifications]

(4) Organic Agriculture Engineer (**Korea Rural Development Administration, 2023**)

(3) Plant Protection Engineer (**Korea Rural Development Administration, 2022**)

(2) Seeds Engineer (**Korea Rural Development Administration, 2022**)

(1) Computer Specialist in Spreadsheet & Database Level 1 (**The Korea Chamber of Commerce & Industry, 2020**)