



中央研究院生物多樣性研究中心

Biodiversity Research Center, Academia Sinica

biodiv@gate.sinica.edu.tw
02-2789-9621

**Genomic Architecture of Trait Evolution and
Plant-Microbe Interactions:
Lessons from *Vigna* for Biodiversity Research**



Dr. Chih-Cheng Chien
簡志丞 博士

Special Researcher
National Agriculture and Food Research Organization
Japan

Time: 2025. 11. 03 Mon. 15:00

Venue: Auditorium, 1st Floor,

Interdisciplinary Research Building

跨領域科技研究大樓1樓演講廳

Host: Dr. Yin-Ru Chiang 江殷儒研究員

Abstract

Legumes provide a robust framework for investigating the genomic basis of domestication and plant-microbe interactions. In particular, studies in *Vigna angularis* and *Vigna radiata* have revealed selection on seed coat pigmentation genes and variation in symbiotic efficiency, respectively, highlighting key evolutionary processes. These insights are further supported by broader investigations into plant immunity and pathogen population structure, including stomatal defense signaling and the phylogeography of bacterial pathogens. Building on these foundations, comparative and functional genomic approaches across legume lineages are enabling the reconstruction of evolutionary trajectories shaped by microbial co-adaptation. Moreover, the integration of population genomics, microbiome profiling, and archaeological data contributes to a deeper understanding of molecular adaptation. Together, these efforts establish legumes, especially *Vigna spp.*, as a model for biodiversity, ecological resilience, and sustainable agriculture.

