

Our research goals focus mainly on molecular phylogenetics, biogeography, and adaptive evolution of woody species endemic to Taiwan. We employed genetic data (e.g., AFLP, MSAP, SSR, and SNP) in population genetics and spatial ecological analyses to understand adaptive evolution in association with climatic, topographic, and ecological factors underlying local adaptation. Our findings can be useful in Taiwan endemic woody species conservation facing future climate changes.

Techniques used in study

Genetic and epigenetic variations
Multivariate analysis
Population genetics
Molecular evolution

Shih-Ying Hwang, Professor

Department of Life Science, College of Science
hsy9347@ntnu.edu.tw

Background:

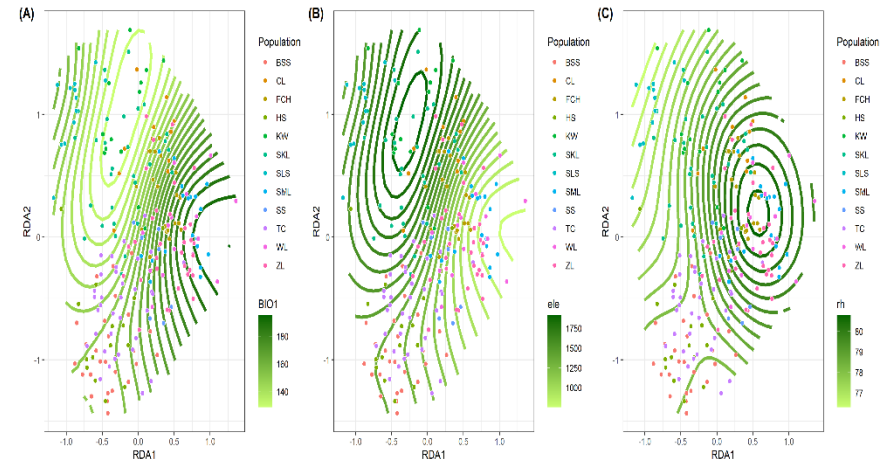
PhD in Plant Physiology Program, Ohio State University, Columbia, OH, USA

Funding:

Ministry of Science and Technology



Adaptive genetic variation along environmental gradients



Publications

1. Li Y-S, Chang C-T, Wang C-N, Thomas P, Chung J-D, Hwang S-Y. (2018) The contribution of neutral and environmentally dependent processes in driving population and lineage divergence in Taiwan (*Taiwania cryptomerioides*). *Front Plant Sci* 9: 1148.
2. Hsieh Y-C, Chang C-T, Chung J-D, Hwang S-Y. (2020) Demographic history and adaptive synonymous and nonsynonymous variants of nuclear genes in *Rhododendron oldhamii* (Ericaceae). *Sci Rep* 10: 16658
3. Chien W-M, Chang C-T, Chiang Y-C, Hwang S-Y (2020) Ecological factors generally not altitude related played main roles in driving potential adaptive evolution at elevational range margin populations of Taiwan incense cedar (*Calocedrus formosana*). *Front Genet* 11:580630

