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Above- and belowground interactions in Jacobaea vulgaris: zooming in and zooming out from a plant-soil feedback perspective

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Curriculum Vitae

Xiangyu Liu was born on the 23rd of October 1992, in Minqin, a county of Gansu province, China. His hometown was surrounded by the Tengri desert and the Badain Jaran desert. During his childhood, he experienced unforgettable memories of sandstorms due to the depletion of groundwater levels and loss of vegetation. In 2011, after completing high school, he was enrolled in Lanzhou University to study ecology. During his bachelor, he actively participated in various field research, assisting PhD students and learning field ecology techniques. In these field work, he was fascinated with the tremendous diversity of species and geographic landforms. After completing his bachelor in 2015, Xiangyu made a far distance move from Lanzhou, a northwest city, to Shanghai, the most developed city in China, to pursue a master degree of ecology. Under the supervision of Prof. Dr. En-rong Yan at East China Normal University, his master's thesis focused on studying the neighborhood effects of woody plants in the evergreen broad-leaved forest of Tiantong, Zhejiang Province. Driven by his passion and desire to deepen his understanding of above- and belowground interactions, Xiangyu joined the Above- and Belowground Interactions Group at the Institute of Biology Leiden in January 2020. He was supported by a PhD scholarship from the China Scholar Council. In his PhD project, he investigated above- and belowground interactions in *Jacobaea vulgaris* from a plant-soil feedback perspective, working under the supervision of Prof. Dr. T. M. Bezemer, Dr. K. Vireling, and Dr. S. T. E. Lommen. The findings of his PhD research are presented and described in this dissertation. Now he has finished his PhD thesis and is eager to continue his academic journey with passion.

List of publications

Publications during PhD

Liu X, He D, Vrieling K, Lommen STE, Gao CG, Bezemer TM. 2024. Distance- and density-dependent recruitment of common ragwort is not driven by plant-soil feedbacks. Basic and Applied Ecology, 76:1–13. https://doi.org/10.1016/j.baae.2024.02.003

Liu X, Bezemer TM. 2023. Current and legacy effects of neighborhood communities on plant growth and aboveground herbivory. Basic and Applied Ecology, 66:63–75. https://doi.org/10.1016/j.baae.2022.12.007

Liu X, Raaijmakers C, Vrieling K, Lommen STE, Bezemer TM. 2022. Associational resistance to nematodes and its effects on interspecific interactions among grassland plants. Plant and Soil, 471:591–607. https://doi.org/10.1007/s11104-021-05238-8

Liu X, Vrieling K, Gomes SIF, Ossowicki A, Lommen STE, van der Drift MCH, Zwart FA, Ekas LS, de Sousa TXM, Erol Ö, Bezemer TM. 2023. Root-associated bacteria as a potential source of biological control agents of *Jacobaea vulgaris.* Plant and Soil. (major revision).

Liu X, Steinauer K, van der Veen-van Wijk K, Bezemer TM. 2023. Zooming in on the temporal dimensions of plant-soil feedback: plant sensitivity and microbial dynamics. (manuscript submitted to Journal of Ecology).

Breeveld FE, van den Broek CC, Gilbers WL, De Nobel LD, Ooms NA, Bezemer TM, **Liu X**. 2024. De strijd om hulpbronnen: ruimtelijke segregatie van twee gespecialiseerde herbivoren op Jakobskruiskruid. Holland's Duinen, 84:35–39.

Gao C, Bezemer TM, van Bodegom PM, Cornelissen HC, van Logtestijn R, **Liu X**, Mancinelli R, van der Hagen H, Zhou M, Soudzilovskaia NA. 2023. Plant community responses to alterations in soil abiotic and biotic conditions are decoupled for above- and belowground traits. Journal of Ecology, 111:903–914. https://doi.org/10.1111/1365-2745.14070

Publications during Msc

Liu X, Zhao CL, Xu MS, Liang QM, Zhu XT, Li L, Yan ER. 2019. Beta diversity of vascular plants and its drivers in sea-islands of eastern China.

Biodiversity Science. (*in Chinese with English abstract*). https://doi.org/10.17520/biods.2018235

Liu X, He D, Tian WB, Song YJ, Yin F, Xu MS, Cheng JY, Yan ER. 2017. Patterns of species associations in woody plants in forest communities of Putuoshan Island, Zhejiang, China. **Journal of Plant Ecology** (Chinese Version). (*in Chinese with English abstract*). https://www.plant-ecology.com/EN/10.17521/cjpe.2017.0170

He D, **Liu X**, Zheng LT. 2023. Sex-specific scaling of nitrogen vs. phosphorus amid largely conserved allometries of multiple interacting traits in *Eurya japonica*, a dioecious plant. American Journal of Botany, 3:e16311. https://doi.org/10.1002/ajb2.16311

Yan ER, Zhou LL, Chen HYH, Wang XH, **Liu X**. 2018. Linking intraspecific trait variability and spatial patterns of subtropical trees. Oecologia, 186:793–803. https://doi.org/10.1007/s00442-017-4042-x

Ali A, Yan ER, Chang SX, Cheng JY, **Liu X**. 2017. Community-weighted mean of leaf traits and divergence of wood traits predict aboveground biomass in secondary subtropical forests. Science of The Total Environment, 574:654–662. https://doi.org/10.1016/j.scitotenv.2016.09.022

Book translation

Mark Vellend. *The Theory of Ecological Communities*. Princeton University Press. (Translated in Chinese and published by Higher Education Press, 2020, ISBN-10: 7040538830).

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