Monitoring drought and salinity stress in agriculture by remote sensing for a sustainable future

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List of Publications

Publications in peer-reviewed Journals (English):

1. **Wen, W.**, Timmermans, J., Chen, Q., and van Bodegom, P. M. (2023) Evaluating crop-specific responses to salinity and drought stress from remote sensing. International Journal of Applied Earth Observation and Geoinformation, 122, 103438. https://doi.org/10.1016/j.jag.2023.103438.
2. **Wen, W.**, Timmermans, J., Chen, Q., and van Bodegom, P. M. (2022) Monitoring the combined effects of drought and salinity stress on crops using remote sensing in the Netherlands. Hydrology and Earth System Sciences, 26, 4537-4552. https://doi.org/10.5194/hess-26-4537-2022.
3. **Wen, W.**, Li, Z., Shao, J., Tang, Y., Zhao, Z., Yang, J., Ding, M., Zhu, X., and Zhou, M. (2021) The distribution and sustainable utilization of buckwheat resources under climate change in China. Plants, 10. https://doi.org/10.3390/plants10102081.
4. **Wen, W.**, Timmermans, J., Chen, Q., and van Bodegom, P. M. (2020) A review of remote sensing challenges for food security with respect to salinity and drought threats. Remote Sensing, 13, 6. https://doi.org/10.3390/rs13010006.
5. **Wen, W.**, Zhao, H., Ma, J., Li, Z., Li, H., Zhu, X., Shao, J., Yang, Z., Yang, Y., He, F., and Liu, Y. (2018) Effects of mutual intercropping on Pb and Zn accumulation of accumulator plants *Rumex nepalensis*, *Lolium perenne* and *Trifolium repens*. Chemistry and Ecology, 34, 259-271. https://doi.org/10.1080/02757540.2018.1427229.
6. Chen, Q., Timmermans, J., **Wen, W.**, and van Bodegom, P. M. (2023) Ecosystems threatened by intensified drought with divergent vulnerability. Remote Sensing of Environment, 289, 113512. https://doi.org/10.1016/j.rse.2023.113512.
7. LI, W., Zhang, K., Tang, Y., Ding, M., **Wen, W.**, LI, B., and Zhou, M. (2023) Fagopyrum caudatum var. grandiflorum, a new variety from China. Phytotaxa, 587, 200-204. https://doi.org/10.11646/phytotaxa.587.2.9.
8. Chen, Q., Timmermans, J., **Wen, W.**, and van Bodegom, P. M. (2022) A multi-metric assessment of drought vulnerability across different vegetation types using high-resolution remote sensing. Science of The Total Environment, 832, 154970. https://doi.org/10.1016/j.scitotenv.2022.154970.
9. Ding, M., Zhang, K., Tang Y., Wang, J., Li, F., Yang, K., **Wen, W.**, & Zhou, M. (2021). Newly discovered tetraploid Fagopyrum homotropicum in Tibet, China. Phytotaxa, 528, 202-208. https://doi.org/10.11646/phytotaxa.528.3.4.
10. Li, Z., Li, Z., Huang, Y., Jiang, Y., Liu, Y., **Wen, W.**, Li, H., Shao, J., Wang, C., & Zhu, X. (2020). Antioxidant Capacity, Metal Contents, and Their Health Risk Assessment of Tartary Buckwheat Teas. ACS Omega, 5, 9724-9732.

https://pubs.acs.org/doi/10.1021/acsomega.9b04007.

11. Huang, Y., Li, Z., Wang, C., Zou, C., **Wen, W.**, Shao, J., & Zhu, X. (2019). psbE-psbL and ndhA Intron, the Promising Plastid DNA Barcode of Fagopyrum. International Journal of Molecular Sciences. https://doi.org/10.3390/ijms20143455.
12. **Wen, W.,** Timmermans, J., Chen, Q., & van Bodegom, P. M. Prospects of salt-tolerant potato to increase food productivity towards a zero hunger world. (In preparation)

Conference/Forum Abstracts:

1. **Wen, W.**, Timmermans, J., Chen, Q., and van Bodegom, P. M. Diverse responses of multiple crops to drought and salinity stress. EGU General Assembly. 2023, Vienna, Austria. (Oral presentation)
2. **Wen, W.**, Timmermans, J., Chen, Q., and van Bodegom, P. M. Evaluating crop-specific responses to salinity and drought stress from remote sensing. International Workshop on Geography and Sustainability. 2023, Beijing, China. (Best Presentation Award)
3. **Wen, W.**, Timmermans, J., Chen, Q., and van Bodegom, P. M. Monitoring the combined effects of drought and salinity stress on crops using remote sensing. 2nd WASAG International Forum on Water Scarcity in Agriculture–Making Agriculture Resilient to Climate Change. 2023, FAO. (Poster presentation)
4. **Wen, W.**, Timmermans, J., Chen, Q., and van Bodegom, P. M. Evaluating crop-specific responses to drought and salinity stress from remote sensing. 2nd Meeting of the International Network on Salt-affected Soils INSAS. 2023, FAO. (Poster presentation)

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Curriculum Vitae

Wen Wen was born in Shehong, China in July 1993. She obtained her bachelor's degree in Land Resource Management from the College of Resources and Environmental Sciences at Sichuan Agricultural University in 2016. During her undergraduate studies, she conducted geospatial analysis to investigate the spatial distribution patterns of economic coefficients related to agricultural land across diverse topographic zones in Sichuan Province. Upon graduation, she received a recommendation to pursue a master's degree at the College of Environmental Sciences at Sichuan Agricultural University. Wen completed her MSc thesis entitled “Phylogenetic Evolution of Buckwheat and Response of Its Distribution to Climate Change” under the supervision of Prof. Xuemei Zhu. During her master study, she joined the research group of Buckwheat Gene Germplasms as an exchange student at the Institute of Crop Sciences, Chinese Academy of Agricultural Sciences in 2018. In September 2019, she was awarded a scholarship for her PhD study funded by the CSC-Leiden University joint program to study at the Institute of Environmental Sciences (CML), Leiden University, the Netherlands. Her research focuses on monitoring the response of crops to simultaneous drought and salt stress from remote sensing for a sustainable future supervised by Prof. Peter van Bodegom and Dr. Joris Timmermans. After completing her Ph.D., Wen intends to further her research in sustainable agricultural systems in the context of climate change.