

Yuxin Miao

Professor of Precision Agriculture
Director of Precision Agriculture Center
Department of Soil, Water and Climate
University of Minnesota-Twin Cities
St. Paul, MN 55108
Email: ymiao@umn.edu

Professional Preparation

Name of Institution	Major	Degree & Year
University of Minnesota-Twin Cities	Soil Science/Precision Agric.	Ph.D., 2005
West Texas A&M University	Plant, Soil & Environ. Sci.	M.S., 1999
Hebei Agricultural University	Agronomy	M.S., 1996
Hebei Normal Univ. of Sci. & Tech.	Agronomy	B.S., 1993

Appointments

Employer	Dates	Position
University of Minnesota -Twin Cities	08/2025-Present	Professor
University of Minnesota-Twin Cities	08/2022-07/2025	Associate Professor
University of Minnesota-Twin Cities	11/2017-07/2022	Assistant Professor
China Agricultural University	01/2007-11/2017	Associate Professor
University of Minnesota-Twin Cities	02/2005-12/2006	Postdoctoral Associate

Selected Honors and Awards

2023 Editor's Citation for Excellence Associate Editor, Agronomy Journal	2024
Tengtou Agricultural Science Award, American Society of Agronomy	2023
Kingenta Agricultural Science Award, American Society of Agronomy	2022
Distinguished Chinese Alumni Award, University of Minnesota	2014
Pierre C. Robert Precision Agriculture Award (Young Scientist), ISPA	2012

Selected Professional Services

Organizing Committee Chair, Minnesota Conference on Precision Agriculture, 2025
Editor-in-Chief, European Journal of Agronomy, 2023 – Present
Steering Committee Member, European Society of Agronomy, 2023-Present
Chair, Kingenta Agricultural Science Award Committee, American Society of Agronomy, 2025
Advisory Board Member, NitroScope Horizon Europe Project, 2025-Present
Guest Editor, Special Issue on ML and RS for Precision Agriculture, Eur. J. Agron., 2024
President, Association of Chinese Soil and Plant Scientists in North America, 2021-2022
Founding Chair, Minnesota On-farm Precision Agriculture Research Network, 2020-Present
Associate Editor: Precision Agriculture (2014-Present), Remote Sensing (2018-Present)
Agron. J. (2019-2024), Agronomy for Sustainable Development (2018-2020)
Founding Leader, Precision Nitrogen Management Community, ISPA, 2016-2018
Award Committee Member, ISPA, 2014-2020
Country Representative, ISPA, 2010-present
Founding Co-Director, Int. Center for Agro-Informatics and Sustainable Development, 2010-2018
Scientific Committee, European Conference on Precision Agriculture (ECPA), 2013-Present
Guest Editor, Remote Sensing for Precision Nitrogen Management, Special Issue in Remote Sensing
Panelist, Minnesota Department of Agriculture Crop Research Grant Review Panel, 2022-2023
Panelist, USDA-NIFA Special Crop Research Initiative, 2019

Professional Membership

International Society of Precision Agriculture, American Society of Agronomy, Soil Science Society of America, Association of Chinese Soil & Plant Scientists in North America, International Society of Agromatics, Society of Christian Scholars

Selected Publications (h-index=54, i10-index=116, total citations>11800)

More detailed publication information can be found at:

https://scholar.google.com/citations?hl=en&user=dzRIjv0AAAAJ&view_op=list_works

- Li, D., Wang, C., **Miao, Y.***, Fernandez, F., Chen, S. 2026. Developing an innovative stacking ensemble machine learning and multi-source data fusion-based precision nitrogen management strategy for corn. *Precision Agriculture*, 27(2), 41.
- Wang, X., **Miao, Y.***, Dong, L., Mi, G., Batchelor, W.D., Kusnierek, K. 2025. Precision nitrogen management for maize based on crop modeling, remote sensing and machine learning. *Computers and Electronics in Agriculture*, 239, 111124.
- Wakahara, S., **Miao, Y.***, McNearney, M., & Rosen, C. 2025. Non-destructive potato petiole nitrate-nitrogen prediction using chlorophyll meter and multi-source data fusion with machine learning. *European Journal of Agronomy*, 164, 127483.
- Raza, A., **Miao, Y.***, Huang, Y.*, Stueve, K., Lu, J., Yang, Z., R Bindlish, R. 2025. Optimizing on-farm corn yield prediction by a multi-source data fusion approach using remote sensing and machine learning. *Smart Agricultural Technology*, 12, 101630.
- Li, Y., **Miao, Y.***, Rawat, A., Stueve, K., Cao, W. 2025. Identifying key soil and landscape factors influencing yield spatial patterns for management zone delineation using ensemble machine learning. *Computers and Electronics in Agriculture*, 237, 110487.
- Dong, L., **Miao, Y.***, Wang, X., Kusnierek, K., Zha, H., Pan, M., & Batchelor, W. D. 2024. In-season dynamic diagnosis of maize nitrogen status across the growing season by integrating proximal sensing and crop growth modeling. *Computers and Electronics in Agriculture*, 224, 109240.
- Lu, J., Dai, E., **Miao, Y.***, & Kusnierek, K. 2024. Developing a new active canopy sensor- and machine learning-based in-season rice nitrogen status diagnosis and recommendation strategy. *Field Crops Research*, 317, 109540.
- Miao, Y.**, Mulla, D.J., Huang, Y. 2024. Remote Sensing for Precision Agriculture, In Thenkabail, P.S. (Ed.) *Remote Sensing Handbook*, Volume III, 229-254.
- Wang, X., **Miao, Y.***, Dong, R., & Kusnierek, K. 2023. Minimizing active canopy sensor differences in nitrogen status diagnosis and in-season nitrogen recommendation for maize with multi-source data fusion and machine learning. *Precision Agriculture*, 24, 2549-2565.
- Dong, R., **Miao, Y.***, Berry, P., Wang, X., Yuan, F., Kusnierek, K., Sterling, M. 2023. In-season prediction of maize stem lodging risk using an active canopy sensor. *European Journal of Agronomy*, 151, 126956.
- Miao, Y.** 2023. Precision Nutrient Management. In Zhang, Q. (Ed.) *Encyclopedia of Digital Agricultural Technologies*, 1054-1061.
- Wang, T., Jin, H., Sieverding, H., Kumar, S., **Miao, Y.**, et al. 2023. Understanding farmer views of precision agriculture profitability in the US Midwest. *Ecological Economics*, 213, 107950.
- Li, D., **Miao, Y.***, Ransom, C.J., Bean, G.M., Kitchen, N.R., Fernández, F.G., et al. 2022. Corn nitrogen nutrition index prediction improved by integrating genetic, environmental, and management factors with active canopy sensing using machine learning. *Remote Sensing* 14, 394.
- Miao, Y.**, Khosla, R., Mulla, D.J. (Eds.). 2022. *Remote Sensing for Precision Nitrogen Management*.
- Wang, X., **Miao, Y.***, Batchelor, W.D., Dong, R., Kusnierek, K. 2021. Evaluating model-based strategies for in-season nitrogen management of maize using weather data fusion. *Agricultural and Forest Meteorology*, 308, 108564.
- Wang, X., **Miao, Y.***, Dong, R., Zha, H., Xia, T., Chen, Z., Kusnierek, K., Mi, G., Sun, H., Li, M. 2021. Machine learning-based in-season nitrogen status diagnosis and side-dress nitrogen recommendation for corn. *European Journal of Agronomy* 123, 126193.
- Cummings, C., **Miao, Y.***, Paiao, G.D., Kang, S., Fernandez, F.G. 2021. Corn nitrogen status diagnosis with an innovative multi-parameter Crop Circle Phenom sensing system. *Remote Sensing*, 12(3), 401.
- Miao, Y.***, Mulla, D.J., Robert, P.C. 2018. An integrated approach to site-specific management zone delineation. *Frontiers of Agricultural Science and Engineering*, 5(4):432-441.
- Cao, Q., Cui, Z., Chen, X., Khosla, R., Dao, T.H., **Miao, Y.*** 2012. Quantifying spatial variability of indigenous nitrogen supply for precision nitrogen management in small scale farming. *Precision Agriculture* 13(1): 45-61.