

Dr. Semra Palali-Delen

semrapalali.sp@gmail.com

University of Nebraska-Lincoln
Department of Agronomy and Horticulture
Center for Plant Science Innovation
Lincoln, NE 68588

Republic of Turkiye Ministry of Agriculture and Forestry Field
Crops Central Research Institute, Biotechnology Center
Ankara/Turkiye



Education

B.S. in Field Crops
Ankara University

2010 - 2014

Ph.D.
University of Nebraska - Agronomy and Horticulture
Major: Plant Breeding and Genetics

2017 - 2022

Dissertation: Dissecting the Genetic Architecture of Mineral Compositions and Yield-Related Traits under Different Nitrogen (N) Conditions in Maize

Working Experience

Researcher
Republic of Turkiye Ministry of Agriculture and Forestry Field Crops Central Research Institute,
Biotechnology Center

2023 -

Publications

- Delen, Y., Mural, R. V., **Palali-Delen, S.**, Xu, G., Schnable, J. C., Dweikat, I., & Yang, J. (2024). **Dissecting the genetic architecture of sunflower disc diameter using genome-wide association study.** Plant Direct, 8(10). <https://doi.org/10.1002/pld3.70010>
- Delen, Y., **Palali-Delen, S.**, Xu, G., Neji, M., Yang, J., & Dweikat, I. (2024). **Dissecting the Genetic Architecture of Morphological Traits in Sunflower (Helianthus annuus L.).** Genes, 15(7), 950. <https://doi.org/10.3390/genes15070950>

- **Palali Delen, S., Lee, J., Yang, J. (2023). Improving the metal composition of plants for reduced Cd and increased Zn content: molecular mechanisms and genetic regulations.** Cereal Research Communications, doi: <https://doi.org/10.1007/s42976-023-00453-8>
- **Palali Delen, S., Xu, G., Velazquez-Perfecto, J., & Yang, J. (2023). Estimating the genetic parameters of yield-related traits under different nitrogen conditions in maize.** Genetics, 223(4), iyad012. doi: <https://doi.org/10.1093/genetics/iyad012>
- **Rodene, E., Xu, G., Palali Delen, S., Zhao, X., Smith, C., Ge, Y., ... & Yang, J. (2022). A UAV-based high-throughput phenotyping approach to assess time-series nitrogen responses and identify trait-associated genetic components in maize.** The Plant Phenome Journal, 5(1), e20030. doi: <https://doi.org/10.1002/ppj2.20030>

Preprint

- **Delen, Y., Palali-Delen, S., Yang, J., & Dweikat, I. (2025). Genome-wide association study for salt tolerance trait of sunflower at the seed germination stage.** bioRxiv

Presentations

1. **Palali-Delen, S. (2025). DNA Isolation for Genotyping and Seed Propagation of Turkish Wheat Varieties.** Soil Borne Pathogens Platform Workshop, 7-8 January, 2025, Ankara/TURKIYE
2. **Palali-Delen, S., Xu, G., Yang, J. (2024). Investigating the Genetic Structure of Nitrogen (N) Response Employing GWAS and GCTB Analysis Under Two Different N Conditions in Maize.** 5th AAB-PlantEd Congress Agricultural Biotechnology in the Era of Genome Editing, 30 October - 1 November 2024, Samsun/TURKIYE
3. **Delen, Y., Palali-Delen, S., Yang, J., & Dweikat, I. (2024). Genome-Wide Association Study for Genetic Architecture of Morphological Traits in Sunflower (Helianthus annuus L.).** 5th AAB-PlantEd Congress Agricultural Biotechnology in the Era of Genome Editing, 30 October - 1 November 2024, Samsun/TURKIYE
4. **Maras-Vanlioglu, F.G., Palali-Delen, S., Delen, Y., Ward, B.P., Tanyolac, M.B., Brown-Guedira, G., Ashrafi, H., Ozkan, H., Keskin, E. (2024). Genome-Wide Association Study Analysis Of Mineral Accumulation In Einkorn Wheat (Triticum Monococcum L.).** 5th AAB-PlantEd Congress Agricultural Biotechnology in the Era of Genome Editing, 30 October - 1 November 2024, Samsun/TURKIYE
5. **Palali-Delen, S. (2023). How to Use GWAS in Medicinal Plants.** Medicinal and Aromatic Plants Workshop. September 11-12, 2023, Ankara/TURKIYE

Posters

1. **S. P. Delen, G. Xu, J. Yang (2022). “Dissecting the Genetic Linkage Between the Toxic Metal (Cd) and Essential Minerals (Zn – Fe) in Maize”**, 5th International Agriculture Congress, UTAK
2. **S. P. Delen, G. Xu, J. Velazquez-Perfecto, J. C. Schnable, J. Yang (2022). “Dissecting genetic architectures of yield-related traits under different nitrogen conditions in maize”**, NAPB (National Association of Plant Breeders)
3. **S. P. Delen, G. Xu, J. Yang (2022). “Identification of the genetic locus to decouple the genetic linkage between harmful heavy metals and essential minerals in maize”**, Maize Genetics Conference
4. **S. P. Delen, G. Xu, Y. Ge, J. Schnable, J. Yang (2021). “Purifying selection of deleterious alleles and its phenotypic consequences on yield-related traits under different nitrogen conditions in maize”**, UNL Plant Science Symposium
5. **S.P.Delen, G. Xu, J. Yang (2021). “Investigate the genetic architecture of controlling mineral composition traits in maize”**, UNL Rothamsted Poster Symposium
6. **S.P. Delen, G. Xu, J. Yang (2021). “Dissect the genetic architecture in controlling mineral composition traits in maize”**, ASA, CSSA, SSSA International Annual Meeting, <https://scisoc.confex.com/scisoc/2021am/meetingapp.cgi/Paper/138692>
7. **S. P. Delen, G. Xu, C. Smith, Y. Ge, J. C. Schnable, J. Yang (2021). “Identification of the yield related traits associated loci under different nitrogen conditions in maize”**, Maize Genetics Conference
8. **S. P. Delen, M. Milner, E. Rodene, B. Sigmon, Y. Ge, J. C. Schnable, J. Yang (2019). “Purifying selection of deleterious alleles and hitchhiking effects on micronutrients during maize domestication and improvement processes”**, Maize Genetics Conference
9. **S. P. Delen, C. Liu, Y. Delen, M. Bhatta, P. S. Baenziger, B. Waters (2018). “Variation of Cadmium (Cd), Zinc (Zn), and Iron (Fe) concentrations in the grain harvested from hybrid wheat (*Triticum aestivum* L.)”**, PSI Retreat

Contributed Posters

1. F. G. Vanlioglu, **S. P. Delen**, Y. Delen, B. P. Ward, M. B. Tanyolac, G. Brown-Guedira, H. Ashrafi, H. Ozkan, E. Keskin (2024). **“Genome-Wide Association Study Spotting Single-Nucleotide Polymorphisms for Iron (Fe) and Zinc (Zn) Biofortification in Einkorn Wheat (*Triticum monococcum* L.)”**, 8th International Seed Congress
2. Y. Delen, R. V. Mural, G. Xu, **S. P. Delen**, J. C. Schnable, J. Yang, I. Dweikat (2022). **“Insights into the genetic architecture of sunflower head diameter using genome-wide association study (GWAS)”**, NAPB (National Association of Plant Breeders)
3. M. Grzybowski, C. Miao, **S. P. Delen**, Y. Ge, J. Yang, J. Schnable (2020). **“High-throughput hyperspectral imaging as a tool to explore natural diversity in biochemical traits over time in maize association panel”**, Maize Genetics Conference
4. J. Chen, Z. Yang, **S. P. Delen**, G. Xu, X. Cheng, J. Yang (2020). **“Visualization of GWAS Results in Maize”**, YNS (Young Nebraska Scientists)
5. Y. Delen, **S. P. Delen**, V. Delen, I. Dweikat (2019). **“Importance of Wild *Helianthus* Species and the Possible Consequences of Their Introduction to Agricultural and Marginal Areas of Turkey”**, 1st International Field Crops Conference in Turkey
6. Y. Delen, **S. P. Delen**, P. S. Baenziger (2018). **“Evaluation of Seed Set in Dominant Male Sterile (DMS) Wheat (*Triticum aestivum* L.) population”**, PSI Retreat

Teaching Experience

1. Teaching Assistant: AGRO 932, Biometrical genetics and plant breeding, 2020. University of Nebraska-Lincoln, Department of Agronomy and Horticulture, Lincoln, NE – ABD
2. Learning Assistant: SCIL 101, Science and decision making for a complex world, 2020. University of Nebraska-Lincoln, Department of Agronomy and Horticulture, Lincoln, NE – ABD
3. Teaching Assistant: AGRO 824, Plant Nutrition, 2019. University of Nebraska-Lincoln, Department of Agronomy and Horticulture, Lincoln, NE – ABD
4. Teaching Assistant: AGRO 355, Annual and perennial pot plants, 2019. University of Nebraska- Lincoln, Department of Agronomy and Horticulture, Lincoln, NE – ABD

Workshops and Training Courses Attended

1. Soil Borne Pathogens Platform Workshop. TAGEM – CIMMYT, Ankara, January 7-8, 2025
2. Training Course on “Advancing Food Security through Sustainable Agricultural Inputs: Strategies and Practices for OIC Member Countries”, August 27-29, 2024.
3. New Genomic Breeding Technologies Seminar, USDA – TAGEM, Ankara, June 4, 2024
4. Data mapping and visualisation: from scattered datasets to a StoryMap. Belgrade, May 14-16, 2024.
5. CRISPR-Cas9. Akdeniz Universitesi, 29 April-10 May 2024
6. Regional Training Course on Accelerated Breeding Techniques for the Development of Crop Tolerance to Abiotic Stress. IAEA Technical Cooperation Project RER5024, Ankara, November 6 – 17, 2023
7. Medicinal and Aromatic Plants Workshop. Directorate of Plant Protection Central Research Institute, Ankara, September 11-12, 2023
8. Plant Genome Editing / Biotechnology Research Center of Field Crops Central Research Institute. Ankara, September 11-15, 2023
9. Genomic and Fluorescence In situ Hybridization (GISH and FISH) Techniques. Biotechnology Research Center of Field Crops Central Research Institute. Ankara, July 03-07, 2023

Selected Service

1. Nebraska Plant Breeding Symposium, Committee Member, 2018. University of Nebraska-Lincoln, Department of Agronomy and Horticulture, Lincoln, Ne – ABD