

Dr. Shai Torgeman
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Higher Education:

2014-2017: B.Sc., Plant Sciences in Agriculture at the Robert H. Smith Faculty of Agriculture, Food and Environment, The Hebrew University of Jerusalem, Israel. Final grade 91.28, bachelor's degree was received as magna cum laude.

2017-2024: Ph.D., Plant Breeding & Genetics, The Robert H. Smith Faculty of Agriculture, Food and Environment, The Hebrew University of Jerusalem, Israel. Supervisors: Prof. Dani Zamir (Hebrew U.) and prof Yuval Eshed (Weizmann Ins.).

Thesis title: “Genome-Wide Dissection of Epistasis QTLs in Tomato”.

Career Experience:

- 2015-2017: Research Assistant at Weizmann institute - Prof. Yuval Eshed lab.
- 2019-2021: Newbreed seeds Ltd. (<https://newbreed-seeds.com>), Trait genetic scientist: I was involved in two key areas: 1) Marker-assisted selection in tomato breeding, overseeing the design and execution of studies aimed at unraveling the inheritance of both qualitative and quantitative traits. 2) QTL analysis of biparental populations and GWAS (Genome-Wide Association Study) aimed at identifying regions in the tomato genome associated with improved yield and quality of the fruit.
- 2021-2024: Processing Tomato breeder. As a part of my role, I responsible for parental lines and hybrids products development and testing across Israel with major focus to California market.

Presentations at scientific meetings:

Invited lecture

- **2022, Torgeman, S.,** Rochsar, E. and Zamir, D. 'Exotic Genetic Libraries' map resistance to Tomato Brown Rugose Fruit Virus (ToBRFV) to the Tobacco Mosaic Virus locus TM1. *The International conference on the Plant Family of Solanaceae (SOL2022)*, Remote, May 2022.

- **2023, Torgeman, S.** and Zamir, D. "Epistasis QTL for Yield Heterosis in Tomato". *Israel Society of Crop and Vegetables Sciences Conference*, Rehovot, Israel, March 2023.
- **2023, Torgeman, S.** and Zamir, D. "Solanum pennellii (LA5240) backcross inbred lines (BILs) for high resolution mapping in tomato". *Harnesstom meeting conference*. Remote, June 2023.

Poster Presentation

- **2019, Torgeman, S.** and Zamir, D. "QTLs mapping in 1500 mapped inter specific backcross inbred lines of tomato". *Frontiers in Genetics XII*, Tel Aviv, Israel, January 2019.
- **2019, Torgeman, S.** and Zamir, D. "Epistasis in 1500 mapped inter specific backcross inbred lines of tomato". *The International conference on the Plant Family of Solanaceae (SOL2019)*, Jerusalem, Israel, October 2019.
- **2022, Torgeman, S.** and Zamir, D. "Epistasis QTL for Yield Heterosis in Tomato". *Eucarpia Meeting of the Tomato Working Group*, Valencia, Spain, June 2022.

Membership in professional societies:

- Membership in The Israel Society of Crop and Vegetable Sciences.
- Membership in HARNESSTOM – EU research initiative that aims to increase resilience and quality of tomato varieties.
- Membership in CAPITALIZE – EU funded horizon 2020 project. Combining science and innovation to improve photosynthesis for higher yielding crops.
- Membership in G2P-SOL – EU - Linking genetics resources, genomes, and phenotypes of solanaceous crops.
- Membership in TomRes – EU - A novel and integrated approach to increase multiple and combined stress tolerance in plants using tomato as a model.

Teaching and training experience:

2023: "Workshop in QTL analysis by R software". *CAPITALIZE Meeting of the Tomato Working Group*.

Awards and recognitions:

- 2016: Included in the Dean list.
- 2018: The Faculty of Agriculture scholarship for outstanding students.
- 2019: Danziger scholarship for outstanding students for breeding research.
- 2023: Best speaker award - *Israel Society of Crop and Vegetables Sciences Conference*, Rehovot, Israel, March 2023.
- 2024: The Va'adia-BARD Postdoctoral Fellowship award.

List of publications:

Torgeman, S., & Zamir, D. (2023). Epistatic QTLs for yield heterosis in tomato. *Proceedings of the National Academy of Sciences*, 120(14), e2205787119.

Zemach, I., Alseekh, S., Tadmor-Levi, R., Fisher, J., **Torgeman, S.**, Trigerman, S., ... & Zamir, D. (2023). **Multi-year field trials provide a massive repository of trait data on a highly diverse population of tomato and uncover novel determinants of tomato productivity.** *The Plant Journal*, 116(4), 1136-1151.

Torgeman, S., Pleban, T., Goldberg, Y., Ferrante, P., Aprea, G., Giuliano, G., ... & Zamir, D. (2024). Solanum pennellii (LA5240) backcross inbred lines (BILs) for high resolution mapping in tomato. *The Plant Journal*.

Rochsar, E+, **Torgeman, S+.**, Bandel, K., Koren, A., Klap, C., Dombrovsky, A., & Zamir, D. **Tissue-specific resistance and susceptibility to the tomato brown rugose fruit virus (ToBRFV) conferred by Solanum pennellii loci.** Under review - BMC.

Patents:

Torgeman, S., Plaben, T., & Zamir, D. EPISTATIC QTL. Patent Application No. PCT/IL2023/051116 filed October 30, 2023, claiming priority from U.S. Provisional Patent Application No. 63/420,591 filed October 30, 2022.