Soodeh Tirnaz

Biography

Soodeh has a Bachelor degree in “Plant Protection” and a master degree in “Plant Biotechnology”. Since moving to Australia in 2013, she has worked as a Graduate Research Assistant at the School of Biological science and ARC centre of excellence in plant energy biology for three years. During that time, she worked on gene expression analysis in canola and genotyping Arabidopsis mutants. She has also been working as a Laboratory Demonstrator in UWA since 2016. Soodeh joined Batley lab in 2016 and worked toward her PhD since 2020. After earning her PhD, she’s been with Batley group as a researcher.

Research Interests

Genomics, Epigenetic, Biodiversity, Plant pathology

Publications

**Journal publication**

1. Hu H, Scheben A, Verpaalen B, **Tirnaz S**, Bayer PE, Hodel RGJ, Batley J, Soltis DE, Soltis PS, Edwards D. Amborella gene presence/absence variation is associated with abiotic stress responses that may contribute to environmental adaptation. New Phytol. 2022 Feb;233(4):1548-1555. doi: 10.1111/nph.17658. Epub 2021 Aug 19. PMID: 34328223.

2. Yang H, Mohd Saad NS, Ibrahim MI, Bayer PE, Neik TX, Severn-Ellis AA, Pradhan A, **Tirnaz S**, Edwards D, Batley J. Candidate Rlm6 resistance genes against Leptosphaeria. maculans identified through a genome-wide association study in Brassica juncea (L.) Czern. Theor Appl Genet. 2021 Jul;134(7):2035-2050. doi: 10.1007/s00122-021-03803-4. Epub 2021 Mar 25. PMID: 33768283.

3. Yang H, Bayer PE, **Tirnaz S**, Edwards D, Batley J. Genome-Wide Identification and Evolution of Receptor-Like Kinases (RLKs) and Receptor like Proteins (RLPs) in Brassica juncea. Biology (Basel). 2020 Dec 30;10(1):17. doi: 10.3390/biology10010017. PMID: 33396674; PMCID: PMC7823396

4. Inturrisi FC, Barbetti MJ, **Tirnaz S**, Patel DA, Edwards D, Batley J. Molecular characterization of disease resistance in Brassica juncea – The current status and the way forward. Plant Pathol. 2021;70:13–34. h t t p s : //d o i .org/10.1111/ppa.13277

5.**Tirnaz S,** Zhang Y, Batley J. 2020. Genome-wide mining of disease resistance gene analogs using conserved domains. In: Jain M., Garg R. (eds) Legume Genomics. Methods in Molecular Biology, vol 2107. Humana, New York, NY.

6.**Tirnaz S**, Batley J. 2020. The importance of plant pan-genome in breeding. Quantitative Genetics, Genomics and Plant Breeding, Second edition (Publisher CABI). In press.

7.**Tirnaz S**, Batley J. DNA methylation toward resistance improvement. 2019. Trends in Plant Science 24 (12): 1137-1150.

8.**Tirnaz S**, Batley J. Epigenetic modification: option or necessity. 2019. Molecular Plant 12:1309-1311.

9.Dolatabadian A, Bayer PE, **Tirnaz S**, Hurgobin B, Edwards D, Batley J. Characterisation of disease resistance genes in the Brassica napus pangenome reveals significant structural variation. 2019. Plant Biotechnology Journal 1-14.

10. Bayer P, Golicz A, **Tirnaz S**, Chan K, Edwards D and Batley J. 2018. Variation in abundance of predicted resistance genes in the *Brassica oleracea* pan-genome. Plant Biotechnology Journal In Press (accepted September 2018)

11.Hurgobin B, Golicz A, Bayer P, Chan K, **Tirnaz S**, Dolatabadian A, Schiessl S, Samans B, Montenegro J, Parkin I, Pires J.C, Chalhoub B, King G, Snowdon R, Batley J and Edwards D. 2017. Homoeologous exchange is a major cause of gene presence/absence variation in the amphidiploid *Brassica napus*. Plant Biotechnology Journal 16: 1265-1274

12.Alamery S, **Tirnaz S**, Bayer P, Tollenaere R, Chaloub B, Edwards D and Batley J. 2017. Genome-wide identification and comparative analysis of NBS-LRR resistance genes in *Brassica napus*. Crop and Pasture Science 69: 79-93.

13.Sanjari S, Shobbar Z.S, Ebrahimi M, Hasanloo T, Sadat-Noori S.A, **Tirnaz S**. Chalcone synthase genes from milk thistle (*Silybum marianum*): isolation and expression analysis. 2015. Journal of Genetics, 94: 611-617.

14.**Tirnaz S**, Shobbar Z.S, Mohamadi-Nejad G, Shahidi Bonjar G.H. Gene expression analysis of OsPP2C5, a candidate protein phosphatase involved in ABA signal transduction, under salt, drought and cold stress in rice. 2009. Journal of Agricultural Biotechnology. 1: 67-78.

**Conference Papers**

1.**Tirnaz S**, Bayer PE, Inturrisi F, Neik TX, Yang H, Dolatabadian A, Zhang F, Severn-Ellis A, Patel DA, Pradhan A, Edwards D, Batley J. Genome-wide identification of resistance gene analogs in the Brassicaceae. PAGXXVIII USA. January 2020.

2.**Tirnaz S**, Merce C, Bayer PE, Severn-Ellis A, Edwards D, Batley J. Characterisation of DNA methylation status in Brassica napus in response to Leptosphaeria maculans. PAGXXVIII USA. January 2020.

3.**Tirnaz S**, Zhang Y, Neik TX, Severn-Ellis A, Bayer PE, Edwards D, Batley J. Identification of candidate resistance genes against blackleg in Brassica napus. PAGXXVIII USA. January 2020.

4.Rijzaani H, Bayer PE, **Tirnaz S**, Batley J, Edwards D. A pangenome for banana. PAGXXVIII USA. January 2020.

5.Hu H, Scheben A, Verpaalen B, **Tirnaz S**, Bayer PE, Hodel R GJ, Batley J, Soltis DE, Soltis PS, Edwards D. The Amborella pangenome suggests gene presence/absence variation is associated with environmental adaptation. PAGXXVIII USA. January 2020.

6.Dolatabadian A, Bayer PE, **Tirnaz S**, Hurgobin B, Edwards D, Batley J. Characterisation of Resistance Genes in the Brassica napus Pangenome. PAGXXVII USA. January 2019.

7.Scheben A, Bayer PE, Dolatabadian A, Golicz A, Hurgobin B, **Tirnaz S**, Chon-Kit Chan K, Edwards D, Batley J. Brassica Pangenomes as a Novel Source of Disease Resistance Genes. PAGXXVII USA. January 2019.

8.Zhang Y, Neik TX, Severn-Ellis A, **Tirnaz S**, Bayer PE, Edwards D, Batley J. Identification of Candidate Resistance Genes Against Blackleg in Brassica napus. PAGXXVII USA. January 2019.

9.Zhang F, Bayer PE, **Tirnaz S**, Severn-Ellis A, Edwards D, Batley J. Resistance Genes in Wild Brassicaceae Species. PAGXXVII USA. January 2019.

10. Inturrisi F.C, **Tirnaz S**, Bayer P.B, Neik T.X, Yang H, Dolatabadian A, Zhang F, Severn-Ellis A, Patel D.A, Pradhan A, Lee H.T, Edwards D. and Batley J. Genome-Wide Analysis of NBS-LRR Genes in the Brassicaceae and Applications for Breeding. PAG XXVI. 2018.

11. **Tirnaz S**, Bayer P.E, Severn-Ellis A, Edwards D and Batley J. Genome-wide identification of disease resistance genes in the Brassicaceae and characterisation of their DNA methylation status in *Brassica napus*. International plant epi/genetics symposium, Angers, France, 2018.

12. **Tirnaz S**, Bayer P.E, Severn-Ellis A, Edwards D and Batley J. Genome-wide identification of disease resistance genes in the Brassicaceae and characterisation of their DNA methylation status in *Brassica napus*. Brassica 2018. meeting.

13.**Tirnaz S**, Bayer P.E, Edwards D and Batley J. Genome-wide identification of disease resistance genes in the Brassicaceae. Stromlo meeting, Canberra, Australia, 2018

14.Chen, **Tirnaz S**., Guo Y, Sirault X, Stefanova K, Nelson M.N., Turner N.C, Salisbury P.A, Furbank R, Siddique K.M.H, Cowling W.A. (2014), “Drought and heat tolerance in *Brassica rapa* and *B. napus* at the early reproductive stage”, 18th Australian Research Assembly on Brassicas, Novotel Barossa Valley Resort, SA. 29 September-2 October 2014.

15.Chen S, **Tirnaz S**, Guo Y, Sirault X, Stefanova K, Nelson M.N, Turner N.C, Salisbury P.A, Furbank R., Siddique K.M.H, Cowling W.A. (2014), “Characterization of drought and heat tolerance in *Brassica rapa* and *Brassica napus* at the early reproductive stage,” The 19th Crucifer Genetics Workshop and Brassica, Wuhan, China.

16.**Tirnaz S**, Shobbar, Z.S, Mohamadi-Nejad, Koobaz P, Shahidi Bonjar, G.H. (2009), “Detection of OsPP2C5 gene expression, a protein phosphatase interfering in signalling ABA, under drought, salinity and cold stress in rice,” The 6th National Biotechnology Congress of Iran, Tehran, Iran.

17.**Tirnaz S**, Shobbar, Z.S, Mohamadi-Nejad G, Shahidi Bonjar, G.H. (2009), “Study of osmotic (salinity) stress effects on sodium and potassium ion uptake in different rice genotypes,” The Second Biotechnology Congress of Iran, Kerman, Iran.

List of Awards

1. 2019- Mike Carroll Travelling Fellowships 2019
2. 2019- Craig Atkins Travel Award in Botany 2019
3. 2019- Graduate Research School travel award 2019
4. 2019- Underwood PhD Scholarship 2019
5. 2018- Grain and research development corporation (GRDC) Research scholarship
6. 2015- University top-up scholarship from University of Western Australia
7. 2015- University Postgraduate Award from University of Western Australia

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