

Kira Tiedge, PhD
Assistant Professor
Tiedge lab



Research interests

Improving Crop Stress Tolerance via (Terpenoid) Specialized Metabolism

The research of our group focuses on specialized metabolism in plants and the many ways we can utilize those metabolites. Currently we investigate the mechanisms that govern environmental stress tolerance in different crops by integrating functional genomics, metabolomics, as well as protein biochemical and genetic approaches with a focus on terpene metabolic networks. Additional interests of ours are the interactions of plants with their environment and the advancement of regenerative farming.

Qualifications

University Teaching Qualification (UTQ), University of Groningen
Award Date: 13-Mar-2023

Plant biochemistry / Molecular Biology, Dr. rer. nat., Nectar regulation in Nicotiana
Award Date: 27-Mar-2018

Employment

Assistant Professor

Tiedge lab
University of Groningen
1-Feb-2022 → 1-Feb-2029

None

Research outputs

Piece by piece: Making plant natural products accessible via heterologous biosynthesis

Tiedge, K., 26-Nov-2022, In: Synthetic Biology. 7, 1, p. 1-2 2 p.

Comparative transcriptomics and metabolomics reveal specialized metabolite drought stress responses in switchgrass (*Panicum virgatum* L.)

Tiedge, K. J., Li, X., Merrill, A., Davisson, D., Chen, Y., Yu, P., Tantillo, D., Last, R. L. & Zerbe, P., Nov-2022, In: New Phytologist. 236, 4, p. 1393-1408 43 p.

Foxtail mosaic virus-induced gene silencing (VIGS) in switchgrass (*Panicum virgatum* L.)

Tiedge, K., Destremps, J., Solano-Sanchez, J., Arce-Rodriguez, M. L. & Zerbe, P., 30-May-2022, In: Plant Methods. 18, 11 p., 71.

Cytochrome P450-catalyzed biosynthesis of furanoditerpenoids in the bioenergy crop switchgrass (*Panicum virgatum* L.)

Muchlinski, A., Jia, M., Tiedge, K., Fell, J. S., Pelot, K. A., Chew, L., Davisson, D., Chen, Y., Siegel, J., Lovell, J. T. & Zerbe, P., Nov-2021, In: Plant Journal. 108, 4, p. 1053-1068 16 p.

Furanoditerpenoid biosynthesis in the bioenergy crop switchgrass is catalyzed by an alternate metabolic pathway

Muchlinski, A., Jia, M., Tiedge, K., Fell, J. S., Pelot, K. A., Chew, L., Davisson, D., Chen, Y., Siegel, J., Lovell, J. T. & Zerbe, P., 31-Mar-2021, (Submitted) BioRxiv.

Genomics-enabled analysis of specialized metabolism in bioenergy crops: Current progress and challenges
Tiedge, K., Muchlinski, A. & Zerbe, P., 2020, In: Synthetic biology (Oxford, England). 5, 1, 12 p., ysa005.

What do nectarivorous bats like? Nectar composition in Bromeliaceae with special emphasis on bat-pollinated species
Göttlinger, T., Schwerdtfeger, M., Tiedge, K. & Lohaus, G., 2019, In: Frontiers in Plant Science . 10, 205.

Nectar sugar modulation and cell wall invertases in the nectaries of day- and night-flowering *Nicotiana*
Tiedge, K. & Lohaus, G., 2018, In: Frontiers in Plant Science . 9, 12 p., 622.

Nectar sugars and amino acids in day- and night-flowering *Nicotiana* species are more strongly shaped by pollinators' preferences than organic acids and inorganic ions
Tiedge, K. & Lohaus, G., 2017, In: PLoS ONE. 12, 5, e0176865.

Activities

What, that comes from a plant?

Kira Tiedge (Contributor) & Martina Sura-de Jong (Contributor)
30-Sept-2023

Exploring (di)terpenoid diversity for sustainable crop production

Kira Tiedge (Invited speaker)
4-Aug-2023

Botany 2023

Kira Tiedge (Organiser)
27-Jul-2023

Discovery of specialized metabolites for crop protection

Kira Tiedge (Invited speaker)
27-Jul-2023

Identification of novel diterpenoids for sustainable agriculture and increased drought tolerance of switchgrass (*Panicum virgatum*)

Kira Tiedge (Invited speaker)
27-Jul-2022

Discovery and pathway elucidation of terpenoids and other specialized metabolites involved in abiotic stress responses

Kira Tiedge (Speaker)
14-Jan-2022

Botanical Society of America (External organisation)

Kira Tiedge (Member of board)
2022 → 2024

Women in Science and Engineering (WISE) (External organisation)

Kira Tiedge (Member of board)
2022 → ...

Retaining mothers in the academic pipeline

Kira Tiedge (Organiser)
9-Apr-2021

Prizes

Arthur C. Neish Young Investigator Award

Tiedge, Kira (Recipient), 30-Jul-2022

ERASMUS Grant

Tiedge, Kira (Recipient), 2012

Full Doctoral Fellowship

Tiedge, Kira (Recipient), 2014

Postdoctoral Research Fellowship

Tiedge, Kira (Recipient), 2019

Professors for the Future Fellowship

Tiedge, Kira (Recipient), 2020

Press/Media**Two Open Competition Science-M grants for FSE researchers**

Kira Tiedge

26/09/2023

1 item of Media coverage

Waddenfonds steekt ruim € 2 miljoen in vier Groninger projecten

Jan Henk Venema, Kira Tiedge, Stefanie Vink & Erik Meijles

26/04/2022

1 item of Media coverage

Workshop fosters solidarity among student parents, strives to retain women with children in the academic pipeline

Kira Tiedge

16/04/2021

1 item of Media coverage