Supporting Information

Herbivore-induced volatile signalling is conserved across locally adapted populations of *Arabidopsis thaliana*

Rodrigo R. Granjel[1]*, Lucía Martín-Cacheda[2,3] Gregory Röder[4], Iago Izquierdo-Ferreiro[5], Andrea Martín-Díaz[6], F. Xavier Picó[6]

[1]Basque Centre for Climate Change (BC3), 48940, Leioa, Spain; [2]Department of Ecology, Environment and Plant Sciences, Stockholm University, SE, 10691, Stockholm, Sweden; [3]Misión Biológica de Galicia (MBG-CSIC), Apartado de correos 28, Pontevedra, Galicia 36080, Spain; [4]Institute of Biology, University of Neuchâtel, Rue Emile-Argand 11, Neuchâtel 2000, Switzerland; [5]Centro Oceanográfico de Vigo, Instituto Español de Oceanografía (IEO, CSIC), Subida a Radio Faro 50, 36390 Vigo, Spain; [6]Departamento de Ecología y Evolución, Estación Biológica de Doñana (EBD), Consejo Superior de Investigaciones Científicas (CSIC), 41092 Sevilla, Spain

*Corresponding email: granjel@gmail.com

Supporting tables

…

Supporting figures

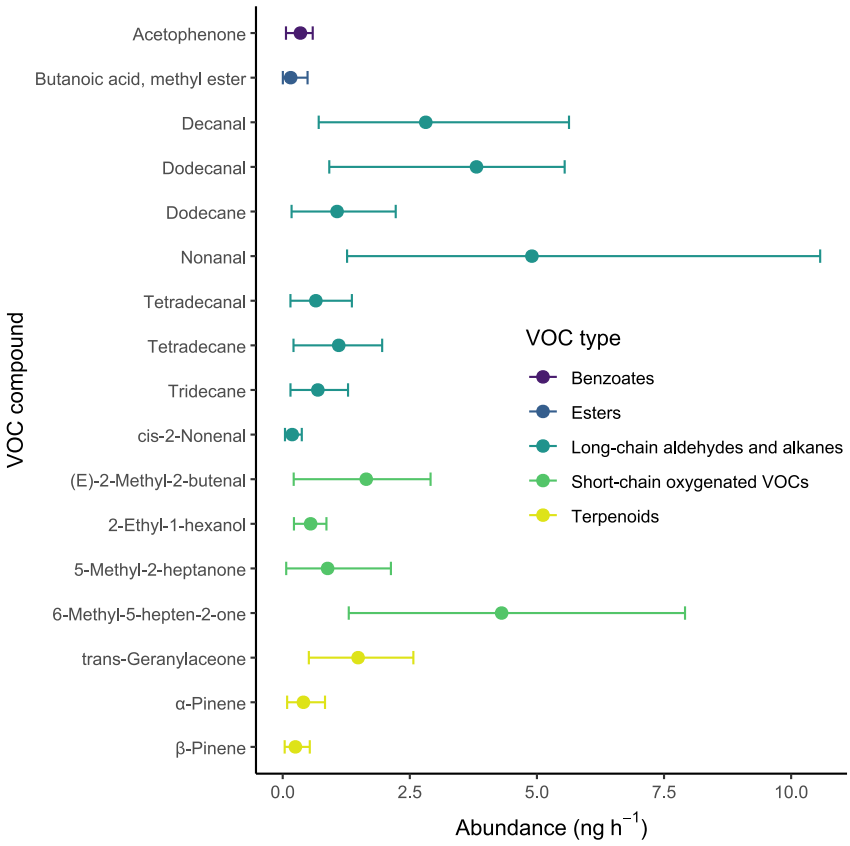

Figure S 1: Volatile organic compounds (VOCs) from blank samples (no plants, only seedling wells with soil), collected to account for background emissions not produced by plants.

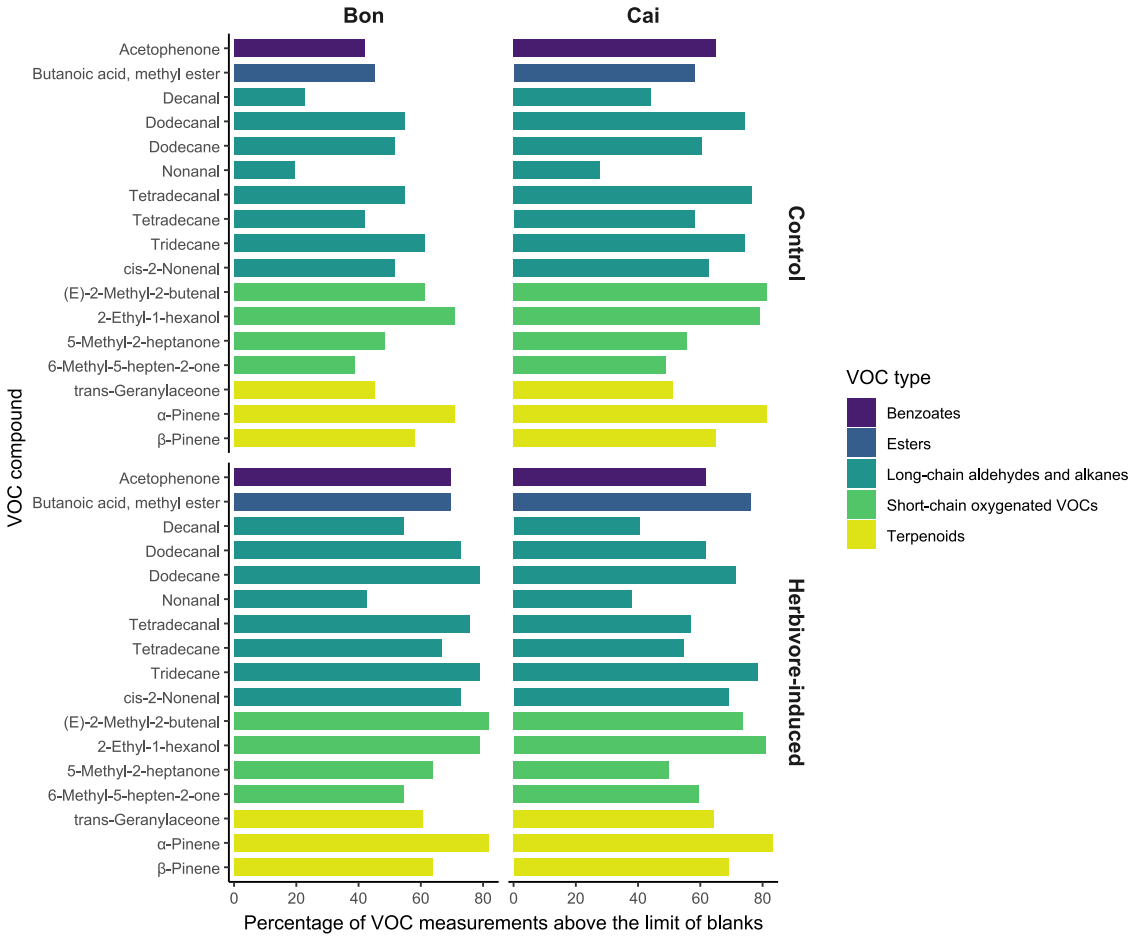

Figure S 2: Percentage of VOC measurements above the limit of blanks for each compound across maternal lines, for each population and treatment, with the different VOC types indicated by color.

Software citations

We used R v. 4.4.3 (R Core Team, 2025) and the following R packages: car v. 3.1.2 (Fox & Weisberg, 2019), carData v. 3.0.5 (Fox *et al.*, 2022), colorspace v. 2.1.1 (Stauffer *et al.*, 2009; Zeileis *et al.*, 2009; 2020), DHARMa v. 0.4.6 (Hartig, 2022), emmeans v. 1.10.1 (Lenth, 2024), ggdist v. 3.3.2 (Kay, 2024a; 2024b), ggpubr v. 0.6.0 (Kassambara, 2023), ggrepel v. 0.9.5 (Slowikowski, 2024), glmmTMB v. 1.1.9 (Brooks *et al.*, 2017), lattice v. 0.22.6 (Sarkar, 2008), lme4 v. 1.1.35.3 (Bates *et al.*, 2015), lmerTest v. 3.1.3 (Kuznetsova *et al.*, 2017), lsmeans v. 2.30.0 (Lenth, 2016), MASS v. 7.3.64 (Venables & Ripley, 2002), Matrix v. 1.7.2 (Bates *et al.*, 2025), MetBrewer v. 0.2.0 (Mills, 2022), MoMAColors v. 0.0.0.9000 (Mills, 2025), multcomp v. 1.4.25 (Hothorn *et al.*, 2008), multcompView v. 0.1.10 (Graves *et al.*, 2024), mvtnorm v. 1.2.4 (Genz & Bretz, 2009), pacman v. 0.5.1 (Rinker & Kurkiewicz, 2018), permute v. 0.9.7 (Simpson, 2022), reshape v. 0.8.9 (Wickham, 2007), survival v. 3.8.3 (Terry M. Therneau & Patricia M. Grambsch, 2000; Therneau, 2024), TH.data v. 1.1.2 (Hothorn, 2023), tidyverse v. 2.0.0 (Wickham *et al.*, 2019), vegan v. 2.6.4 (Oksanen *et al.*, 2022).

Bibliography

Bates D, Maechler M, Jagan M. 2025. Matrix: Sparse and Dense Matrix Classes and Methods.

Bates D, Mächler M, Bolker B, Walker S. 2015. Fitting Linear Mixed-Effects Models Using lme4. *Journal of Statistical Software* **67**: 1–48.

Brooks ME, Kristensen K, van Benthem KJ, Magnusson A, Berg CW, Nielsen A, Skaug HJ, Maechler M, Bolker BM. 2017. glmmTMB Balances Speed and Flexibility Among Packages for Zero-inflated Generalized Linear Mixed Modeling. *The R Journal* **9**: 378–400.

Fox J, Weisberg S. 2019. *An R Companion to Applied Regression*. Thousand Oaks CA: Sage.

Fox J, Weisberg S, Price B. 2022. carData: Companion to Applied Regression Data Sets.

Genz A, Bretz F. 2009. *Computation of Multivariate Normal and t Probabilities*. Heidelberg: Springer-Verlag.

Graves S, Piepho H-P, Sundar Dorai-Raj LS with help from. 2024. multcompView: Visualizations of Paired Comparisons.

Hartig F. 2022. DHARMa: Residual Diagnostics for Hierarchical (Multi-Level / Mixed) Regression Models.

Hothorn T. 2023. TH.data: TH's Data Archive.

Hothorn T, Bretz F, Westfall P. 2008. Simultaneous Inference in General Parametric Models. *Biometrical Journal* **50**: 346–363.

Kassambara A. 2023. ggpubr: `ggplot2' Based Publication Ready Plots.

Kay M. 2024a. ggdist: Visualizations of Distributions and Uncertainty in the Grammar of Graphics. *IEEE Transactions on Visualization and Computer Graphics* **30**: 414–424.

Kay M. 2024b. ggdist: Visualizations of Distributions and Uncertainty.

Kuznetsova A, Brockhoff PB, Christensen RHB. 2017. lmerTest Package: Tests in Linear Mixed Effects Models. *Journal of Statistical Software* **82**: 1–26.

Lenth RV. 2016. Least-Squares Means: The R Package lsmeans. *Journal of Statistical Software* **69**: 1–33.

Lenth RV. 2024. emmeans: Estimated Marginal Means, aka Least-Squares Means.

Mills BR. 2022. MetBrewer: Color Palettes Inspired by Works at the Metropolitan Museum of Art.

Mills BR. 2025. MoMAColors: Color Palettes Inspired by Artwork at the Museum of Modern Art in New York City.

Oksanen J, Simpson GL, Blanchet FG, Kindt R, Legendre P, Minchin PR, O'Hara R, Solymos P, Stevens MHH, Szoecs E, *et al.* 2022. vegan: Community Ecology Package.

R Core Team. 2025. R: A Language and Environment for Statistical Computing.

Rinker TW, Kurkiewicz D. 2018. pacman: Package Management for R.

Sarkar D. 2008. *Lattice: Multivariate Data Visualization with R*. New York: Springer.

Simpson GL. 2022. permute: Functions for Generating Restricted Permutations of Data.

Slowikowski K. 2024. ggrepel: Automatically Position Non-Overlapping Text Labels with `ggplot2'.

Stauffer R, Mayr GJ, Dabernig M, Zeileis A. 2009. Somewhere over the Rainbow: How to Make Effective Use of Colors in Meteorological Visualizations. *Bulletin of the American Meteorological Society* **96**: 203–216.

Terry M. Therneau, Patricia M. Grambsch. 2000. *Modeling Survival Data: Extending the Cox Model*. New York: Springer.

Therneau TM. 2024. A Package for Survival Analysis in R.

Venables WN, Ripley BD. 2002. *Modern Applied Statistics with S*. New York: Springer.

Wickham H. 2007. Reshaping data with the reshape package. *Journal of Statistical Software* **21**.

Wickham H, Averick M, Bryan J, Chang W, McGowan LD, François R, Grolemund G, Hayes A, Henry L, Hester J, *et al.* 2019. Welcome to the tidyverse. *Journal of Open Source Software* **4**: 1686.

Zeileis A, Fisher JC, Hornik K, Ihaka R, McWhite CD, Murrell P, Stauffer R, Wilke CO. 2020. colorspace: A Toolbox for Manipulating and Assessing Colors and Palettes. *Journal of Statistical Software* **96**: 1–49.

Zeileis A, Hornik K, Murrell P. 2009. Escaping RGBland: Selecting Colors for Statistical Graphics. *Computational Statistics & Data Analysis* **53**: 3259–3270.