***eLife’s* transparent reporting form**

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**Sample-size estimation**

* You should state whether an appropriate sample size was computed when the study was being designed
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* If no explicit power analysis was used, you should describe how you decided what sample (replicate) size (number) to use

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This information can be found in the Materials and Methods, in the sections *Study sites* and *Experimental crop communities.*

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* Statistical analysis methods should be described and justified
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* For each experiment, you should identify the statistical tests used, exact values of N, definitions of center, methods of multiple test correction, and dispersion and precision measures (e.g., mean, median, SD, SEM, confidence intervals; and, for the major substantive results, a measure of effect size (e.g., Pearson's r, Cohen's d)
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Information about the statistical analyses be found in the Materials and Methods, in the section *Data analyses.* Figures including raw data (i.e. boxplots) can be found in the supplementary information. Exact values of N are specified for each analysis in the figure legends. Means and standard errors for each analyses can be directly seen on the plots. Effect sizes for the most important results can be found in the main text, in the *Results* section. P-values are reported in the *Results* section whenever a comparison or test result is mentioned.

(For large datasets, or papers with a very large number of statistical tests, you may upload a single table file with tests, Ns, etc., with reference to sections in the manuscript.)

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* Indicate how samples were allocated into experimental groups (in the case of clinical studies, please specify allocation to treatment method); if randomization was used, please also state if restricted randomization was applied
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* Include model definition files including the full list of parameters used
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The source data can be found as a whole online, on a public repository, as well as the R code used for the analyses.