

Preregistration

My preregistration for *Tetradesmus* lipids

MSc project

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Data collection	No , no data have been collected for this study yet.
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Hypothesis	The fatty acid profile of <i>Tetradesmus obliquus</i> will consist of fewer polyunsaturated fatty acids and more saturated fatty acids upon exposure to both heat waves and microplastic pollution.
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Dependent variable	The concentration of known fatty acids in <i>Tetradesmus obliquus</i> before and after exposure to a heat wave and microplastic pollution.
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Conditions	There will be six conditions in total. Temperature treatments will be one of constant ambient (20c), constant warming (24c) or a heat wave event (up to 32c for 3 days). Microplastic treatments will either have zero microplastics or 1000 particles per mL. The study is factorial, so 6 conditions total with 4 biological replicates each.
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Analyses	A linear mixed effects model will be used to determine if the concentration of any fatty acid changes significantly after exposure to increased temperature or microplastics.
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Outliers and exclusions	We will calculate the median and IQR across all treatments and plot boxplots using this data. Outliers as shown on these plots will be excluded.
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Sample size	Due to the highly precise nature of HPLC-MS/MS, one sample per replicate for all treatment groups will be measured.
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Other	We will also collect data on the concentrations of lipid classes present in each sample, including which fatty acids are in them. This data will be explored for potential further analysis.
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Study type	Finally. For record keeping purposes, please tell us the type of study you are pre-registering. <ul style="list-style-type: none">• Experiment
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References
