

Interactive comment on “Organic exudates promote Fe(II) oxidation in Fe limited cultures of *Trichodesmium erythraeum*” by Hanieh T. Farid et al.

Hanieh T. Farid et al.

h.tohidifarid@gmail.com

Received and published: 6 November 2017

Farid and coauthors report a study aimed to examine the influence of organic exudates released by Fe-limited *Trichodesmium* on Fe(II) oxidation. My major concerns with the study are on the experimental design and culturing techniques (please see below), and I believe only after these points are fully addressed we can start to evaluate the findings presented in the manuscript.

1. No biological replication! This is problematic. I am not convinced at all that there was a significant difference in growth rate between the two treatments. Without replicated cultures, how did the author perform statistical analysis and obtain a p value 0.05

(Fig1)?

BGD

- Please refer to our response to Ref #1, Comment # 1&2.

2. Albeit the ASW was treated with chelex resin, there was no information (e.g., trace metal concentrations) on how efficient the treatment was. If background trace metals had not been sufficiently removed, background Fe can easily be at nM levels, concentrations comparable to the amount of Fe added (i.e., 10 nM), which could significantly change Fe chemistry in the media.

- The requested information regarding Fe concentration in the background will be added to the revised manuscript.

3. Why did the authors choose to change Fe' by changing EDTA but not Fe concentrations? 0.05 _M EDTA cannot provide a sufficient buffering capacity for all the trace metals including Fe added in YBCII medium. How Fe precipitation would affect the chemistry of other metals and how would this influence change the experimental results?

- Please refer to the response given to ref #1, comment 2. - The main aim of this study was to provide two different Fe conditions/growth rates to see the effect of organic exudates (filtrates obtained under those conditions) on the oxidation rate of added Fe(II). Thus, initial precipitation (mostly in Fe(III) forms) in the background/media is not expect to affect the oxidation rate measurements. Furthermore, in the additional experiments EDTA will be kept constant and Fe will be varied, while precipitation will be avoided.

Interactive comment on Biogeosciences Discuss., <https://doi.org/10.5194/bg-2017-129>, 2017.

Interactive
comment

Printer-friendly version

Discussion paper

