Biogeosciences Discuss., 6, C651–C652, 2009
www.biogeosciences-discuss.net/6/C651/2009/

Biogeosciences Discussions

Interactive comment on "Influence of elevated CO_2 concentrations on cell division and nitrogen fixation rates in the bloom-forming cyanobacterium *Nodularia spumigena*" *by* J. Czerny et al.

Anonymous Referee #1

Received and published: 10 June 2009

This is a very nice manuscript reporting on the impacts of elevated CO2 and ocean acidification on the growth and nitrogen fixation of Nodularia from the Baltic Sea. The authors report that elevated CO2 lead to decreased growth rates and nitrogen fixation while C quota and C:N go up, and the C:P ratio is constant. These data are really interesting as the impacts on growth and N2 fixation at least are very different from the reported effects of higher CO2 on another diazotrophic cyanobacterium, Trichodesmium.

The work has been well designed and carried out, and is discussed carefully. I have no real criticism of the paper but have a couple of points that the authors may like to

Full Screen / Esc
Printer-friendly Version
Interactive Discussion
Discussion Paper

consider:

1) Given the current controversy about altering CO2 by acidifying the medium vs bubbling with CO2, some justification for choosing acidification, with the change in alkalinity this brings about, could have been included.

2) I wonder whether, given the propensity of Nodularia to form large blooms and cell clumps, extension of the study to compare aggregated vs homogeneous cultures might be warranted and discussed at least.

I am intrigued by the suggestion that another cyanobacterium, Anabaena, may show a different response - is this closer to that of Trichodesmium or a different response again? A bit more information would be useful.

Interactive comment on Biogeosciences Discuss., 6, 4279, 2009.