Biogeosciences Discuss., 8, C6346–C6348, 2012
www.biogeosciences-discuss.net/8/C6346/2012/

Biogeosciences Discussions

Interactive comment on " Effects of stoichiometry and temperature perturbations on beech litter decomposition, enzyme activities and protein expression" *by* K. M. Keiblinger et al.

Anonymous Referee #2

Received and published: 10 April 2012

The authors examine the effects of litter stoichiometry and temperature on enzyme kinetics. They examined the effects of three litter types with varying C:N ratios over two different temperature treatments. They monitored enzyme activities over time. In their methods the author's should mention which enzymes were used to examine enzyme activities. They only provide the generic term cellulose activity, where a substrate should be included. Additionally a time zero should have been calculated to examine the effects of the treatments. I could not find such a baseline in the paper, if one exists the authors should include it.

The authors fail to address implications of statistical significance. They indicate partic-

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

ular variables to be driving the system, however neglect to state that all variables were significant. For example p11839 lines 8-12 the authors indicate that “treatment” was the most prominent influence on three enzymes and less so on others; however all enzymes were significant for treatment (Table 2). Furthermore they ignore interaction terms, which when provided were significant for all site*treatment with p=0.05 and 6 of the 9 variables presented. The authors need to either include the F statistic for other variables or explain explicitly why they were removed when F statistics for both site and treatment were present.

For me the key message of the paper was the effect of microbial community on decomposition dominates the discussion section, but is only briefly mentioned in the results. In the discussion the authors do an excellent job overviewing existing studies on the dominance of particular taxa over others while relating their data to the discussion. If this is the main take-home message then greater emphasis needs to be placed on the proteins earlier in the paper.

Finally they need to include greater detail on the methods of protein extraction and identification. Overall their methods for determining false discovery are accurate. All replicates should have been assayed for proteins, however due to the cost constraints it is understandable why they were not included. Yet proteomics is an emerging science and the authors rely heavily on proteomics for a key conclusion in the paper on the microbial community. They should have supplemented the proteomics data with some other established analysis of the microbial community. Granted that is most likely not feasible, the authors should explicitly elucidate the potential pit-falls of using proteomics data for the readers.

Overall the combination of using proteomics for microbial community assessment coupled with the extensive study of enzyme kinetics make this an innovative study linking community to function. However the presentation and interpretation of some of the results limits the study.

BGD

8, C6346–C6348, 2012

Interactive comment on Biogeosciences Discuss., 8, 11827, 2011.