Biogeosciences Discuss., 12, C8441–C8443, 2015
www.biogeosciences-discuss.net/12/C8441/2015/

Biogeosciences Discussions
Open Access
EGU

Interactive comment on "Biological and climatic controls on leaf litter decomposition across European forests and grasslands revealed by reciprocal litter transplantation experiments" *by* M. Portillo-Estrada et al.

M. Portillo-Estrada et al.

Miguel.PortilloEstrada@uantwerpen.be

Received and published: 11 December 2015

- "In the paragraph 3.3 seems more logical..." As suggested, the section 3.3 will be reorganize to better present the results. Firstly the chemical composition changes during the decomposition, and secondly the dependences with the climatic variables.

- "... However, there are no data about initial contents of nitrogen and carbon in plant remains." As exposed in the paper, we analyse litter of different species and origins. In order to draw out conclusions valid for the sites of study, which vary in climatic charac-

teristics, we needed to compare the individual decomposition experiments altogether. As you pointed out, the initial chemical composition of the different litter types vary among the species. But to cross-compare all the data and study the changes in chemical composition during the litter decay, we presented it in percentage relative to initial, which normalizes the values. As you suggested, we also believe it is important to report the initial C and N contents in mg/g, and the values will be reported in Table 1, as a characteristic of the litter originated in each site, after the row "Total specific leaf area". We will also discuss briefly these results.

For your interest, we can already post here the initial C and N litter contents:

P syl (Hyy) = 46.68 %C, 0.39 %N; P syl (Män) = 46.69 %C, 1.24 %N; F syl = 45.87 %C, 0.98 %N; P men = 48.31 %C, 1.52%N; L per = 44.18 %C, 0.67 %N; F pse = 44.01 %C, 1.62 %N

We can already see that the disparity of the initial N contents among litter types supports the idea that the climatic factors drove the decomposition more than the litter quality characteristics.

- As for your comment "Several incomprehensible description of the correlations between the rate of decomposition and the different parameters, such as temperature, leaf area, N content and other. If it is possible to lead a table which showing the correlation coefficients." At the beginning, we considered a lot of parameters for modelling the decomposition in relation to the litter quality characteristics and climatic characteristics. But the performance of the linear mixed effect models shown in the section 3.4 were improved step by step as the less meaningful parameters were drawn out from the models, following the AIC criterion. So, the models shown in the paper include only the meaningful independent parameters to explain the dependent parameter. Nevertheless, we could include a table as a supplementary material with the individual relationships of the k rate, C, and N concentrations with all the parameters measured in this study. We would like to know if this answers correctly your request.

BGD

12, C8441–C8443, 2015

All the best and thank you for your review! Miguel Portillo-Estrada

Interactive comment on Biogeosciences Discuss., 12, 18053, 2015.