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Biogeosciences Discussions

Interactive comment on "Leaf level emissions of volatile organic compounds (VOC) from some Amazonian and Mediterranean plants" *by* A. Bracho-Nunez et al.

Anonymous Referee #3

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General comments

The manuscript aims to present a screening of BVOC emission rates of Amazonian and Mediterranean species. In its current form, the manuscript does not qualify for publication. It is not a clear structured screening or a report on ecosystem specific differences. It does include also some ecological viewpoints like the different habitats of Amazonian species (floodplain and upland) but the discussion about the differences in emissions is weak and almost drowned in lengthily described, already known findings. The potentially new information does not really come to play here.

The authors state, as example, in the methodology part that they have recorded the whole gas exchange but, no information on photosynthetic status during the emission measurements is presented. This narrows the value of the reported emission rates severely. There are no information about the leaf temperatures while emission, light regimes etc. etc.

The measurement systems were lengthily described but the implications that Amazonian species where measured in large (9L and 100L) cuvettes, representing branch or whole plant emissions but the Mediterranean species measured with a leaf cuvette (105 mL) is nowhere discussed. Especially it is a question what is the number of replicates? Trees, branches or leaves.

The readability and therefore the information one can gain by that manuscript is largely hampered by the bulky sentences. As example, long lists of species names, or lists of percentages. These things should be presented in tables.

Specific comments

Enclosure techniques: If I got the point, you have used the "elsewhere" described system for tropical plant measurements and the detailed described part refers to the mediterranean measurements? Please change that paragraph so that this come clear. In the current form, the long and detailed described system appears out of the blue and it is not obvious if it refers to the one or the other measurement system.

Page 15286, line 6ff: How was the temperature within the chamber? You have an enclosure where it is, say, easy to cook the plant. So temperatures can rise high in such enclosures if there was direct light on it.

Page 15286, line 26ff: Ok, here it come clear that the above, elsewhere described system was actually described in this work once more. Is that necessary? Here you also describe detailed, but with less effort the system used for Mediterranean plant measurements. Is that necessary? Maybe that system was also described before and can be linked by reference?

Page 15290, line 11: You tell that you used the leaf dry weight to relate the mass flow (eq 1). Well, how was the leaf dry weight obtained? The Amazonian trees have been either complete saplings or branches while the Mediterranean refer to one leaf (small cuvette). Do the tropic species exude resins or contain as well oils? Are you sure that the leaves have been the only emitting tissue or compartment?

Page 15292, line 11ff: Please do not just repeat here the information (percents) that are already given in the figures.

Technical comments

Generally I would turn around the axes of figures 1 and 2. The species name as y-axis and the emission rates as x-axis. It is much easier to read then the species name and if common emitted compounds would be presented on the same scale a visual comparison between mediterranean and Amazonian species might be possible.

Table 1: The footnotes reusing the letters a through f and the ecosystem codes (a through j) render the readability of that table to almost zero. As reader, I will just skip finding what is what and the information in that table will be almost useless.

Figure 5: Please indicate the color codes.

Interactive comment on Biogeosciences Discuss., 9, 15279, 2012.