Biogeosciences
Discussions

Interactive comment on "Characterization on the rhizoremediation of petroleum contaminated soil as affected by different influencing factors" *by* J. Tang et al.

Anonymous Referee #2

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This paper deals with research on phytoremediation that is an important approach in removing of organic pollutants in soil. Although the research area in this MS is a little bit different from common papers published in BG, I do think that BG should enlarge its scope and publish such type of work to reflect the on-going development of soil pollution and its remediation. The paper consists of several experiments to analyze different influencing factors during phytoremediation of petroleum contaminated soil. These are good experiments with high-quality data, and they definitely deserve to be published. Basically, I think that the research is important in the area of geosciences as many parts of geo-system have been contaminated severely by petroleum hydrocarbons. The selected factors have also been proved to be crucial in the management

of phytoremediation. However, I think the management of phytoremediation should be further discussed based on this research and some specific points should be made clear.

In Materials and Methods, the experimental design for different influencing factors should be written in detail. For example, for the effect of fertilizer addition, when did the fertilizer was added? What indexes were tested for different experiments except petroleum content? How the EMA for bioaugmentation was prepared? What kind of PGPR bacteria was used in your experiment. How did the PGPR applied?

Page8, line3-5, why did you select and compare the 4 different plant species. References should be given in this paragraph to explain the literature report on the selected plants for THP bioremediation.

It is important and interesting to test the effect of different TPH concentration on the degradation rate. You conclusion is that 2% content of TPH is suitable for phytoremediation. However, 2% TPH will exert growth inhibition on plant growth as shown by other researchers (Peng et al. 2009). So please explain why 2% can give the best remediation result in spite of the inhibition effect. This should also be further discussed in Discussion part based on literature report.

In Fig 5, please clarify and mark the bands that existed in the original soil, and what bands are newly developed. From DGGE result, is it possible to track the added microorganisms (EMA and PGPR)? What is the effect of added microorganisms on the native microorganisms? What do you think of your result as compared to other research result?

For the effect of remediation time on the result, I agree with you that microbial agent is generally effective at early period and plant may enhance the remediation process after certain period of growth. How can you manage both microbial agent and plant growth most effectively based on your research?

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