

Responses to reviewer 1

Dear reviewer:

We appreciate very much for your constructive suggestions and comments. The manuscript se-2014-87 “Changes in soil quality due to converting *Pinus* to *Eucalyptus* plantations and subsequent successive *Eucalyptus* planting in southern China” has been carefully revised in light of your comments and those of another reviewer. Our point-to-point responses to each of the comments and suggestions are listed below.

Thank you very much for your time in improving our manuscript.

Sincerely,

K. Zhang

Point-by-point responses to the comments:

Review’s comment #1:

Figures are OK, but I recommend using color instead of grey shading.

Author’s response:

Thanks for your wonderful recommendation. In the revised manuscript, color has been used in Figures.

Review’s comment #2:

I suggest reading and citing the following papers to strongly support some aspects of this research:

Morugán-Coronado et al. 2013. Application of soil quality indices to assess the status of agricultural soils irrigated with treated wastewaters. *Solid Earth* 4, 119-127.

Muñoz-Rojas et al. 2012. Organic carbon stocks in Mediterranean soil types under different land uses (Southern Spain). *Solid Earth* 3, 375-386.

Parras-Alcántara et al. 2013. Impacts of land use change in soil carbon and nitrogen in a Mediterranean agricultural area (Southern Spain). *Solid Earth* 4, 167-177.

Tesfahunegn. 2013. Soil quality indicators response to land use and soil management systems in Northern Ethiopia's catchment. *Land Degradation & Development*. DOI: 10.1002/ldr.2245.

Author’s response:

Thanks for your suggestions. After carefully reading these papers, we have cited these references in the revised manuscript.

Many studies have focused on soil physic-chemical properties (Garay et al., 2004; Muñoz-Rojas et al. 2012; Parras-Alcántara et al. 2013), microbial communities ...

It provides an intelligible and more holistic measurement of soil quality and, in recent years, the SQI has been used to assess the impacts of land use change,

forest and cropland management and ecological restoration (Navas et al., 2011; Morugán-Coronado et al., 2013; Tesfahunegn, 2013).

Review's comment #3:

Page 2780 Line 7 A brief sentence explaining how SQI was calculated is necessary here.

Author's response:

This sentence has been changed to “a soil quality index was calculated by using the principle component analysis method.”

Review's comment #4:

Page 2782 Line 24 Re-write: “Mean annual rainfall is 1100-1300 mm, concentrated...”.

Author's response:

This sentence has been re-written as “Mean annual rainfall is 1100-1300 mm, concentrated...”.

Review's comment #5:

Line 26 Please, provide a reference for soil data.

Author's response:

A reference has been added as “Soils in the region are mainly lateritic red earth with a profile depth of more than 80 cm. Soil's pH range from 4 to 5 (Chen et al., 2013).”

Review's comment #6:

Page 2783 Lines 3-4 Re-write: “*Pinus* plantations began to be replaced with *Eucalyptus* plantations”

Author's response:

This is sentence has been re-written as “the *Pinus* plantations began to be replaced with *Eucalyptus urophylla* × *grandis* (*Eucalyptus*) plantations.”.

Review's comment #7:

Line 27 How were plots selected?

Author's response:

The selection of plots was re-written as “Three 20 m × 20 m plots were randomly marked out in each plantation site. Each plot is more than 20 m away from another.”

Review's comment #8:

Line 27 Insert a space between numbers and units (m). Also in page 2786.

Author's response:

A space between numbers and units was inserted in the revised manuscript.

Review's comment #9:

Page 2784 Lines 3-4 If data are available, the amount of litter per ha should be provided.

Author's response:

We are very sorry that the amount of litter was not accurately measured and the data was not available in this study. We only described it according to the survey during our sampling time.

Review's comment #10:

Line 24 Re-write: "methyl", low case.

Author's response:

"Methyl" has been re-written as "methyl".

Review's comment #11:

Page 2785 Line 13 Do not use abbreviations in titles. Re-write: "Calculation of the soil quality index".

Author's response:

This title has been re-written as "Calculation of the soil quality index".

Review's comment #12:

Lines 18-28 Re-write: "Three steps were used to identify the MDS in our study. (1) Data screening: one-way analysis of variance (ANOVA) was performed for soil chemical and biological properties; only variables with significant differences between treatments ($p < 0.05$) were chosen for the next step. (2) Selection of representative variables: PCA was performed on the variables chosen from step (1); only principal components (PCs) that explained at least 5% of the variation in the data up to 85% of the cumulative variation were examined; within each PC, only weighted factors with absolute values within 10% of 25 the highest weight were retained for the MDS. (3) Redundancy reduction: multivariate...".

Author's response:

Thanks for your careful suggestions. This paragraph has been re-written as you suggested.

Review's comment #13:

Page 2792 Line 3 Re-write: "a reduction in soil organic matter decomposition rates...".

Author's response:

This sentence has been re-written as "a reduction in soil organic matter decomposition rates...".