

Review of SE-2014-87.

Changes in soil quality due to converting *Pinus* to *Eucalyptus* plantations and subsequent successive *Eucalyptus* planting in southern China

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General comments

The manuscript falls within the scope of Solid Earth, BUT a short text should be included in the Introduction stating: why soil quality assessment is necessary? What are the risks of not doing so? What are the expected negative impacts at a worldwide scale, for example in organic matter content, soil erosion or fertility? This will help the final paper to fit perfectly Solid Earth's scope.

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.

Detailed comments

Page 2780

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

Page 2782

Line 24 Re-write: "Mean annual rainfall is 1100-1300 mm, concentrated...".

Line 26 Please, provide a reference for soil data.

Page 2783

Lines 3-4 Re-write: "*Pinus* plantations began to be replaced with *Eucalyptus* plantations"

Line 27 How were plots selected?

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

Page 2784

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

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

Page 2785

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

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...".

Page 2792

Line 3

Re-write: "a reduction in soil organic matter decomposition rates..."